A LECTURE COURSE

TO

PHYSICIANS

ON

NATURAL METHODS

IN

DIAGNOSIS AND TREATMENT

AIDS TO HUMANITY HELPERS

SEVENTH EDITION—REVIZED

OVER 450 ILLUSTRATIONS

OVER 350 ILLUSTRATIV CLINICAL CASES

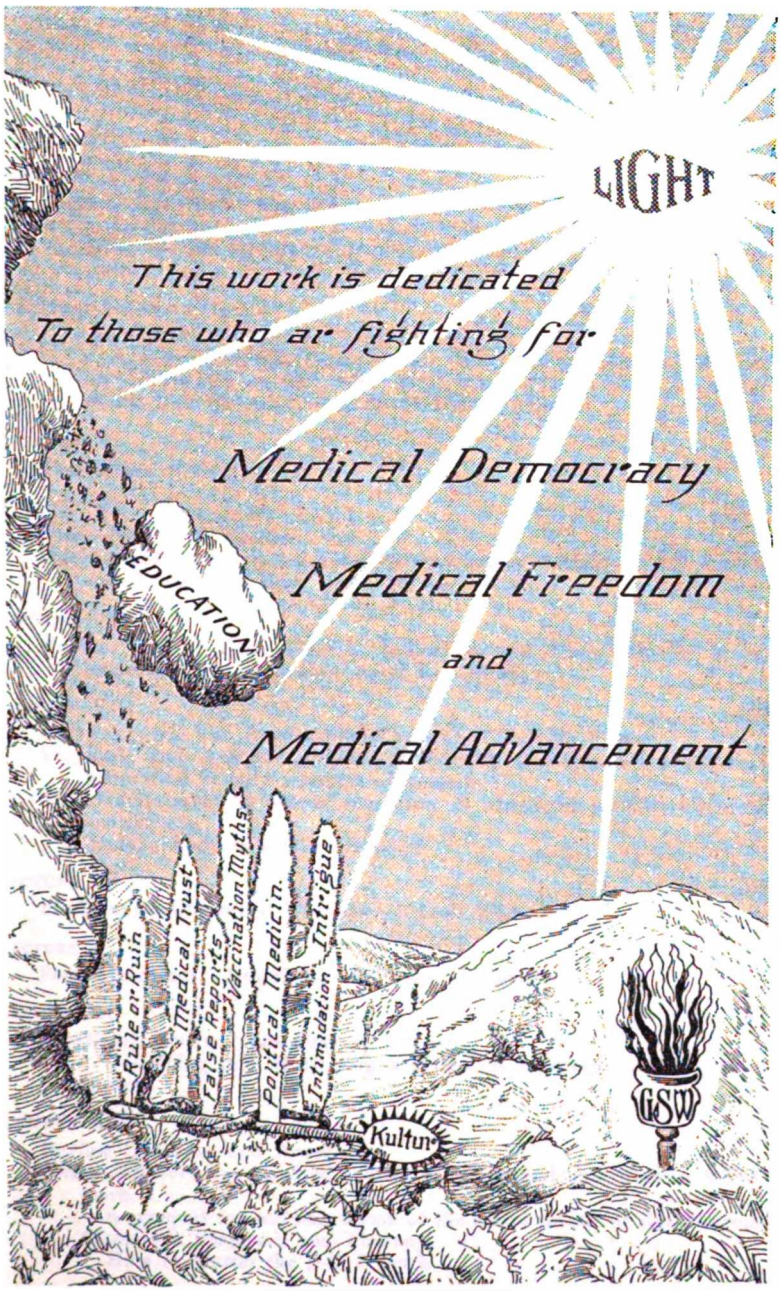
BY

GEORGE STARR WHITE M. D., F. S. Sc. LOND.

LOS ANGELES, CALIFORNIA

Member American Institute of Homeopathy
Member State and County Homeopathic Medical Societies
Member Alumni Association New York Homeopathic Medical College and Flower Hospital
Fellow American Electro-Therapeutic Association
Member The National Society of Physical Therapeutics
Member American Association for the Advancement of Science
Member National Geographical Society
Member National Association of Audubon Societies
Member Navy Leag of the United States
Member the National Arts Club of New York City
Fellow Incorporated Society of Science, Letters, and Art of London, England

Illustrated,
Printed and Bound
in Los Angeles, California, U. S. A.



CONTENTS

PART ONE

PART FIVE

PART SIX

(This Part gives the most elaborate discussion of Zone Therapy that has ever been publisht. Illustrated by over seventy-five drawings and half-tones, most of which ar original.)

PART SEVEN

PART EIGHT

PART NINE

PART TEN

LIST OF ILLUSTRATIONS

LOS ANGELES

Los Angeles has aptly been designated the "climatalogical capital" of the world. It has also been cald the best advertized city in the United States, which condition arises because usually a single visit converts the casual viewer into a booster.

While Los Angeles is most widely known for its climate, flowers and fruits, it has much else to commend itself for consideration. Probably it is most famous for its climate because every human being is interested in the wether and visitors coming from the more rigorous climes grow more enthusiastic over the balmy air and brilliant sunshine than does the nativ.

Reduced to the cold calculations of the United States wether bureau, it is found that no city in the United States of the first class has so good a wether report. This section leads all others in sunshine, with 75 per cent. of the possible amount during the year. Only one city of its size has less rain, that being Denver, but with its rain Denver also has wind and snow.

Unlike most cities by the sea, there is very little humidity in the air of Los Angeles. The warm Japanese Current that bathes the coast lines continually keeps the range of the thermometer and barometer within narrow confines. There is very little rain if any from May until October so that the summer may be counted upon as a half-year of genial sunshine.

The annual rainfall is 15.70 inches, which comes from October to April. This is just about equal to the winter average in the middle states. The average wind velocity is four miles an hour, the lowest in the United States, while snow, hail, thunder and lightning practically ar unknown. The city is the only one that the government credits with a perpetual growing season.

While unquestionably the climate is the chief charm to those coming to Los Angeles to escape winter storms elsewhere, the visitor soon lerns that climate is not all that

interests and pleases. The city now has a population of nearly 600,000 with suburbs that bring the county population close to a million. It is not only a very beautiful city but is superlativ in many ways. It has the largest area of any city in the United States; it has the longest single stretch of boulevard; it receives electric power from the longest power wire in the world; it is supplied with water thru a 250-mile aqueduct; it has the largest institutional church in the world; the next to largest Y. M. C. A. building in the world; the largest oliv grove in the world within its corporate limits, and has other distinctiv features that ar interesting and impressiv.

Nature did much to make Southern California a delightful place in which to visit or liv but she did not do all. The enterprising population of Los Angeles, which has doubled every decade for the past thirty years and which probably wil show a like record in the 1920 census, hav done much to make life plesant for themselves as wel as for visitors.

Los Angeles is the center of the greatest interurban electric system in the world. It has 1,100 miles of tracks, radiating from the hart of the city like the spokes of a wheel. The traveller within a few hours' ride may visit the ocean beaches, pass thru flower borderd orange groves and reach the mountains of the national forest reserv. In addition to the interurban system it has a magnificent network of boulevards making automobiling a delightful pastime. These highways and interurban lines place a score of beach resorts and an equal number of foothil and mountain beauty spots within an hour or two of the hart of the city.

Life is not all sunshine, scenery and flowers, however. Los Angeles spends more per capita for education than any city in the country. It is credited with being a center for the study of art, music and literature. It certainly is true that many writers, artists and composers find their fullest expression in the land where flowers bloom all winter, and the sight of growing things is ever available.

One of the chief attractions of the city is its beautiful homes. The mildness of the climate permits tropical and semi-tropical plants and trees to flourish in the open thruout the year. The beautification of homes is not confined to the rich, as nature is equally indulgent to the most modest bungalow dweller. The humble home is adornd with flowers and vines and frequently equals in beauty the palatial mansions of the welthy. Vegetation of all kinds grows so rapidly that

it is not necessary to wait for years when a new residence is establisht to hav it assume a homelike and settled appearance.

One of the most appealing features in visiting in Los Angeles or coming here to liv is the cosmopolitan caracter of its population. A person must be from an obscure corner of the world indeed if he does not find in Los Angeles persons from "back home." Less than five per cent. of the population is nativ born, while some of the middle western states claim former residents in Los Angeles by tens of thousands. There ar ninety state societies composed of persons who retain friendships of former years thru these organizations. The Federated State Societies hav on record more than half a million names of persons who hav come to Southern California from the United States and its insular possessions. When the Iowa Society holds its annual picnic in February, the attendance is greater than the population of any city in Iowa except Des Moines.

It is but natural that in a region where nature has been so lavish agriculture and horticulture should flourish. Los Angeles county is credited in the 1910 census of the United States with the greatest soil production of any in the United States. The state of California ranks first in the Union in production, being credited with 6.7 per cent. of the total of the United States with less than 2 per cent. of the farmers and 1.3 per cent. of the land under cultivation.

The conditions that make for record yield of the soil also ar an aid to the 2,000 industrial establishments in the metropolitan district of Los Angeles. The slogan of the city is "Los Angeles, Where Nature Helps Industry Most." Manufacturers ar awakening to the realization that where industry is unimpeded by blizzards in the winter and oppressiv heat in the summer the opportunity for development and profit is greatest. The contented employe also is a feature to be considerd, as is the lower cost of living in a climate where hevy clothing is unnecessary and the item of heat in homes is reduced to a minimum.

Those who fear that a maximum balmy wether might prove enervating may lern to the contrary by inspecting the great city harbor, the largest man-made port on the Pacific coast, which has opend the gates of Los Angeles to the commerce of the world.

The energy of Los Angeles business men brot this construction about as it did the good-roads system, the great

twenty-four million dollar aqueduct, the magnificent hotels, the great orange orchards, transportation systems and other achievements that hav arousd the admiration of the world.

For eastern physicians, the change in coming to this beautiful city is a rare treat; and there is always enuf in the city itself, or the surrounding places, to instruct and fascinate one when they ar not busy studying.

As a resort for invalids, probably Los Angeles is as good as any other city. The change from the cold eastern winters to the balmy climate of Southern California is in itself a boon to the over-wrot and helth-seeking patient.

These ar a few salient facts to be borne in mind when taking a post-graduate course or when referring patients.

Altho most of my life has been spent in the East in or about New York City, yet I hav adopted Los Angeles, California, as my home and in so doing hav followd the example of the thousands who came, saw and wer conquerd.

"If I can liv

To make some pale face brighter, and giv
A second luster to some tear-dimd eye,
Or e'en impart
One throb of comfort to an aking hart,
Or cheer some wayward soul in passing by;
If I can lend
A strong hand to the fallen, or defend
The right against a single envious strain,
My life tho bare
Perhaps of much that seemeth dear and fair,
To us on erth, wil not hav been in vain."

NOTE

The *paper* upon which this book is printed is of special finish and tint to meet the requirements of the eye, as proved by the most recent experiments.

The *type* used in this book is special type "hand cut," which makes it more natural and easy to read than the ordinary "machine cut" type.

The *spelling* in this book is made to conform with the 1918 bulletin of the Simplified Spelling Board, 18 Old Slip, New York City. A few words ar purposely left unchanged, for example, physician, chromatic, etc. If occasionally the old style spelling has been mixt in with the new, it wil not be surprizing because it is quite a task for stenografers and printers to adapt themselvs suddenly to rules in orthografy different than those which they lernd in scool.

It might be of interest to my readers to lern that the Simplified Spelling movement was begun about eleven years ago and has been adopted by the Modern Language Association of America, 22 State Teachers Associations, and many other educational bodies and lerned societies thruout the country. 459 universities, colleges and normal scools hav endorst the work. 547 newspapers and periodicals, circulating more than 18,000,000 copies ar using this reformd spelling. Besides all these, some of the most up-to-date books hav adopted this advanst method of spelling.

No one can stand stil. One must either recede or advance.

Let advancement be our motto.

INTRODUCTION

To evolv new methods for relieving suffering humanity, I hav always tried to pattern after natural laws. When I began teaching new and original methods in diagnosis and treatment, my pupils would ask me for a written synopsis of the lectures. As I did not always hav this at hand, the pupils would employ a stenografer to take the lectures down that they might hav them for reference.

I then began printing a short lecture course containing about fifty pages. Little by little I kept adding to it to meet the requirements of my pupils. It is for that reason that all the editions that hav preceded this one hav been written "for pupils only" to be used in connection with personal demonstrations and lectures. My pupils told other physicians about my work, until the demand for this Lecture Course was too great for me to teach personally, and it is for that reason that I undertook the task of writing this Seventh Edition anew from beginning to end. This edition is written, I hope, so any physician can master the work without personal instruction.

If, however, any physicians should wish private instruction along any of the lines set forth in this work, I am willing to do all I can toward teaching them. No doubt little by little many physicians wil be able to teach this work as wel as I and so relieve me of the immense amount of work that is entaild.

Should any physicians wish private instruction from me in any of the lines given in this work, I would request them to write me stating just what they want to lern and how much time they can spend in Los Angeles.

For a few years I traveld across the continent to teach physicians. I did this to accomodate those who could not come to California, but I cannot continue to teach in this manner. I hope, however, to be able to go east at least once a year to meet my pupils and hav a "general reunion" to talk over advancement along these lines.

I should be very glad to hav my pupils organize a "get together" society to help one another along new and useful lines in fysical diagnosis and treatment. Such meetings ar profitable to all.

All original workers ar aware of the fact that their work wil at first be condemd and obstructed in every way possible. This only helps to make the innovator the stronger.

I would thank my readers if they would keep me informd as to any new and useful methods in aiding suffering humanity. It is only by co-operation that we can all advance along these lines. The longer one livs and the more he observs, the less he wil find he knows.

It is my ernest desire to aid physicians to aid suffering humanity and if I hav succeded in doing this, I shal be very thankful.

Jno. Starr White, M.D.

Los Angeles, California,

April 5, 1918.

A FOREWORD—MOSTLY ABOUT MARTYRS

By EDWIN F. BOWERS, M.D., New York City*

Negating the fine and splendid traits that hav made humanity gods (tho in the germ) ar others not so commendable—traits that ar typical, caracteristic, and disgustingly universal.

One of these is cowardice; another is reactionism. These two attributes, I am convinst, hav retarded the progress of the world more decidedly and more effectivly than all other agencies combind.

For they ar the mental monsters that hav blockt the pathway of every innovation. They represent the psycological attitude back of the faggot and the rack, the persecution and the banishment. Ostracism and repudiation ar of their sinister family.

They ar the blinders on the brain, the hampering cog on the Wheel of Progress. Aristides markt one of them with his stylus on the oyster shel. Galileo murmurd another on his recanting nees. Copernicus, Kepler, Darwin, Tyndall Huxley, Pasteur, Semmelweiss, Simpson—most of the pioneers in science, in medicin, in art, in music, in filosofy—in everything that spels advance—hav drunk to the dregs the bitterness of its draft.

Where the action has slightly evoluted from persecution, it takes the form of what we ar pleasd to term, "conservatism," which means that the thing leans so far back in the direction of medievalism that it makes the Leaning Tower of Pisa look like an obelisk in comparison.

Men grow "mutton-chop whiskers" and preternaturally solem countenances extolling the virtues of this same conservatism—blindly oblivious to the fact that they, and the intellectual half-wits who share with them their opinions, ar

*As Dr. Bowers is such a wel-known writer and medical critic, and because he has seen me diagnose so many cases and has communicated with so many of my pupils I askt him if he would write a foreword for the *Seventh Edition* of my *Lecture Course to Physicians*. The following is his contribution.

merely barnacles on the keel of a great Moving Force, a force whose impulse is as irresistible as is the flow of a glacier.

All of which is suggested by many things and divers experiences. But chiefly by the recalcitrancy of the "medical profession," and by its hesitancy to enthusiastically endorse and universally practis the marvelous discovery of my friend, George Starr White, M.D., of Los Angeles, California.

This is more reprehensible to my mind, in that the failure to adopt Dr. White's methods exacts an annual toll of thousands—if not scores of thousands—of precious human lives. I am glad to lern, however, that many progressiv physicians hav adopted these methods and that the numbers ar continually increasing.

I know absolutely what Bio-Dynamo-Chromatic Diagnosis does. I personally hav had indubitable evidence of the accuracy of the method—evidence which, to the "*every day senses*" seemd almost unbelievable.

I hav seen again and again the most obscure cases of tuberculosis, cancer, syfilis, gonorrhea, and various other toxemias, diagnosed as redily as a skild percussor would outline a consolidated lung area.

I hav seen patients brot to Dr. White completely coverd except for the bared abdomen. I hav watcht the masterful way in which Dr. White would determin the nature of their ailment.

In the silences of that darkend offis I hav witnest miracles—all the more miraculous in that I, or any medical man with average intelligence and a pitch-true ear, could with a little practis perform the same miracles.

'Tis simple, as ar all the wonderful things of nature when rightly understood—merely the patient's response in blood tension to the current of magnetism running over the meridians of the erth; and to his changed sympathetic-vagal reflex resulting from this; and from the true-vibration of various radiant colors which temporarily restore to normal a tension made abnormal by some diseasd process.

The method is beautiful, clear, and as accurate as gravitation, cohesion, chemical affinity, or any of the other fenomena that ar accepted—mainly because those who first advocated them ar ded.

Suggestion and telepathy, as explanations, ar entirely

eliminated from Dr. White's method. First, because a suggestion, in order to be effectiv, must be communicated to the recipient—in this case, the patient. Otherwise he could not act upon it. But neither Dr. White nor any of the medical men present knew in advance what was the matter with the patients. So the patients could not get the suggestion from us. (Most of the cases wer considerd suffering from some ailment other than Dr. White proved it to be.) The patients themselves certainly did not know. Otherwise they would not hav come to Dr. White and paid him for finding out what they alredy knew.

And if they *did* know, they couldn't change the tension of their vagus and make it respond only to the particular radiant color that normalized their rate and mode of vibration, and correctly attuned it to its psyco-fysiological norm.

Also, hundreds of Dr. White's physician pupils elicit these same differential reflexes, in all parts of the country and on all classes of patients. *I know this,* for I hav red their letters and hav had personal reports from them.

Which brings me to say again that "medical men" lack courage and moral stamina. Otherwise they would proclaim these truths broadcast. They would lend the weight of their names and their influence to the general acceptance of a method that discloses toxic processes discoverable in no other way, and at their very inception.

But sometime, after Dr. White has been thoroly and completely ded for about fifty years, the methods for which he has fought so hard to obtain recognition wil be part of the equipment of every successful physician. In the meantime I'm for him and his B-D-C methods—"tooth, hair, and toenails."

In the February, 1918, issue of *Physical Culture,* Dr. Bowers givs the public a general idea of what the Bio-Dynamo-Chromatic work is and what it means to humanity.

This article was not publisht until the editors of the magazine had investigated the reports of at least fifty of my physician pupils thruout the United States. They wer almost a year in looking the matter up.

SPARKS
from
THE AUTHOR'S ANVIL

I AM a "Red Blooded American," born and reard at Danbury, Conn. I did not lern my work "while abroad," for I hav never been "abroad." I hav livd over fifty-one years in the U. S. A. and somehow I hav come to think that one can lern about all that is worth lerning right in America.

I believe one can lern "abroad" if they do not spend too much time "sight seeing."

In fact one must be foolish who cannot lern at all times and in all places—but the idea that "all good is from abroad" is obsolete.

I would hav been a clergyman had I not studied with pastors of four different denominations at one time. That set me to thinking. I hav been thinking ever since.

I first lernd the "good old-fashiond natural methods" for healing the sick. I studied spinal work under no specially coind name. I studied "allopathy," but that was against my nature. I graduated with the "M. D." degree from a homeopathic college. I am now simply a PHYSICIAN—no pathies, no cults. Being a student and lover of nature from my erliest recollection, I naturally turn to the Great Out-of-Doors for guidance in trying to aid suffering humanity.

If you hav never done so, just take a hart-to-hart talk with Mother Nature and see if she does not know more about her children than all the "outsiders" can ever hope to know.

"Nature is stronger than education."

"Nature is beyond all teaching."

Nature directs knowledge, knowledge directs practis, practis increases knowledge, which in turn teaches us how to understand Nature.

"He that knows not and knows not that he knows not, is a fool,
Shun him.
"He that knows not and knows that he knows not, is simple,
Teach him.
"He that knows and knows not that he knows, is asleep,
Wake him.
"He that knows and knows that he knows, is wise,
Follow him."

If you believe in "Kultur" don't read this book.

If you ar satisfied with so-cald "Regular Medicin" don't read this book.

If you don't believe in the Laws of Nature, stop reading this book before you begin.

That there may be no misunderstanding of my term "Political Doctor," I wish to explain. The Medical Profession, as a *profession* stands for the most noble and unselfish of men and women. No other profession can boast of such a multitude of self-sacrificing persons.

As in all other professions there wer those who saw how they could "work politics" into medicin and be Demagogs—Kaisers, if you please—in the field of medicin.

The rank and file of physicians can be clast in this respect as the *German people* ar clast by all who know them and hav been among them—true, honest, hard-working people. However, a Great Octopus has grown and thrust his tentacles into their very harts without their knowing it until they ar at the mercy of a Despot. I hav faith in the *German people* and believe that their eyes wil be opend and that they wil liberate themselves from the slimy, poisonous arms that grasp them.

So hav I faith in the American People as wel as the rank and file of the Medical Profession. They wil not indefinitly endure certain unprincipled demagogs to rule the Medical Profession thru dishonest politics. These Political Doctors hav no soul; no honor. It is "rule or ruin" with them.

A great body of the Medical Profession hav unwittingly allowd themselves to be enmeshd in the web of this

Monstrous Dragon. Only a certain few "Ring Leaders" of this "Kaiser Bund" ar real gainers thru this Hellish System. The rank and file of the Medical Profession hav been a long time waking up to just what is taking place. The PEOPLE wer the first to wake up. They shook their family physician to awaken him.

ANY ASSOCIATION OR TRUST, WHICH AIMS TO STRANGLE PROGRESS AND DECEIVE THE PEOPLE HAS NO RIGHT TO LIVE. KIL IT!

The man who condems the whole world because he finds a few bad ones in it is like the one who said he hated roses, because he had prickt his fingers in gathering them years before.

One evening while preparing for a "Shriner's Convocation," a caller spied me with my fez on. He said he would never be a shriner because he hated the red fez so. He said if I had ever had the experience with the Turks that he had had in Palestine, I would hate them too. This is a narrow way of seeing things, but we nearly all hav narrow vision, unless we gard ourselvs against it.

America, as wel as most of the world, is fighting against "Kultur" in politics. Soon America must fight against "Kultur" in medicin. The handwriting is on the wall.

Giving a man a license to "heal the sick" does not make him a PHYSICIAN. Christ was a TRUE PHYSICIAN and *He did heal the sick*. Records do not show that his license was given by a power higher than God.

Medical laws do not protect the public. The public has to liv in spite of the medical laws.

A REAL PHYSICIAN wil not hesitate to use any method that wil relieve the sick.

A REAL QUACK is one who wil hesitate to use or recommend any method to relieve the sick, unless it is sanctiond by some "governing board."

To be a PHYSICIAN one does not necessarily hav to administer dedly poisons nor mutilate the body, any more than a pedestrian has to carry dynamite in his pocket to "giv him a lift."

The soldiers' greatest foe is the "Medical Octopus," the political doctor steept in "Kultur." His next greatest

foe is the cigaret. How significant that these two dedly foes ar hiding in a "war mesure." Watch them, they wil hav to come out in time, then KIL them both.

More people in the U. S. ar being treated by fysical, natural methods than by all the medical methods combined. This shows PROGRESS.

In an editorial of a recent medical journal of the *old type,* it was said that it was astonishing with what rapid strides the "Christian Science" faith was spreding. It went on to say that the "medical fraternity" should take means to educate the people against this faith. The "old type medicos" hav deceived the people so long that they ar looking for LIGHT and they ar finding it. I am glad. I stand for ANY faith, method, or system that wil better mankind and liberate him from the tentacles of the "great medical octopus" posing as a leader in medical ethics, but when turnd up side down "Made in Germany" is stampt on them. In a subtle manner—the "kultur way"—these political doctors ar trying to choke off all medical freedom and make all citizens of this "FREE" country "voluntarily" seek them, or be *"legally compeld"* to do so.

A citizen should hav as much right to employ whomsoever he might choose to treat him, when he is sick, as he has the right to employ a barber or hairdresser or any one else. The public pays and should be FREE to choose. The "tail" to a doctor's name does not make him safe, his license does not protect the public. LET THE PUBLIC CHOOSE! The worst scoundrels I hav ever met hav had many "tail letters" to indicate that they wer fit to treat the sick.

(The dog should wag the tail—not the tail wag the dog.)

On the other hand some of the truest and best PHYSICIANS I hav ever known had no degree, but they aided suffering humanity, and did not make dope fiends of their patients either.

Who is responsible for the great multitudes of unfortunates who ar addicted to drug habits? The "M. D.'s" no matter from what school they haild! It is a living disgrace to our noble profession that this is true, but true it is and no one dares deny it. You may say it was "of long

ago," but I say that it is of TODAY as of yesterday. Is the public protected against such treatment by employing a *licenst* doctor, or one with this or that degree attacht to his name? NO. A stranger has to take a chance in the selection of a physician, but the majority of persons can size a man up and would do so all the better if they did not THINK the state protected them.

The public ar waking up and they ar looking for "drugless healers," because they ar afraid to trust the "M. D.'s." Can you blame them? Who is to blame? The slow, backward physician, who has been so bound down to drugs (dope) and the knife that he would not try to lern Natural Methods—Fysical Methods. The time is coming, fellow physicians, when you wil ALL hav to know and use FYSICAL Methods—NATURAL Methods, or you wil be relegated with the "lancers of old."

You can't reform a drunkard by getting him drunk.

We can never evolv perpetual peace by cannon fire.

You can't reform a quick-temperd person by making him mad.

EDUCATION must be the foundation of all reform.

Education does not mean "Kultur." "Kultur" develops the basest part of man's nature—selfishness—the idea that might makes right.

I believe alcohol has done more harm in the world than it can ever do good. Beware of any physician who says "alcohol is good for you."

I also believe tobacco in all forms is a curse. Physicians, if they do their whole duty, could soon stamp alcohol and tobacco out, but too many physicians ar slaves to one or the other or both. Fellow physicians, if *you* can't giv up dope, do try to keep your patients from it.

Only recently an old, and wel establisht manufacturer of surgical instruments wrote me that they would not dare show in their catalog any Zone Therapy goods for fear that a certain journal ownd and controld by The Medical Kultur Bund would refuse to allow them to advertize in their "organ" if they showd any article that the "Kaiser" of this Kultur Bund did not "approve of."

This is only an example, for there ar VERY many such instances reported to me. O, for a Democracy in Medicin! What ar the innocent members of this Kultur Bund thinking of to allow their support to such a lot of High Binders! Every cent you turn their way is ammunition to block progress. Zone Therapy is too far abov board to suit The Medical High Binders. Zone Therapy helps others to help themselves without serums, vaccines or dopes. Of course the Kultur Bund would object to such open, free methods. Had Zone Therapy been born of Mrs. Satan and fatherd by the Kaiser of the Kultur Bund, whole pages of their "organ" would hav been given to lauding it.

Recently I red what the spokesman for the Medical Trust promist the "dear people" when the "Government took control of the licensing of practitioners," etc. I wonder what he thinks the PEOPLE wil be doing and what THEY wil do about it.

It reminds me of the temptation recorded in Holy Writ, which was to the effect that satan offerd Christ all the kingdoms of the erth if he would fall down and worship him. As far as I can lern the devil never had a clear title to a single foot of erth. It is easy to offer the PEOPLE what does not belong to the "donor." The PEOPLE ar getting away from the Medical Octopus very rapidly, but they hav to be educated. That is being done by every branch of the healing art that espouses *fysical, natural methods*, for aiding the sick. Some hav been misled and think it is best to court the devil to rid the erth of devils. That is wrong. One cannot serv good and bad at the same time. Cut loose from the devil and then it is easy to fight him. Cut loose from all that smacks of political medicin—the Medical Trust—and fight them in the open. *Educate the people!* It is they who pay the bils. It is they who ar to say whether their children shal be mutilated and poisond thru state medicin—thru Kultur camouflaged to appear like "safety first."

Recently a homeopathic physician—one not belonging to the Political Medical Bund—told me he had resignd from his honorable society that he might be with those "with more political pul." I told him he should be ashamed of himself. A being who wil neel to the devil to get from the devil what does not belong to him, has no right to parade as a *healer* of men, but as a *heeler* of the devil.

Soon the scale wil turn—soon the political power of the Medical Trusts wil falter and fall, because the PEOPLE ar waking up. Then see these turncoats rush for the winners. There ar and always hav been, cowards in all armies. Do not be a coward but stand up for the fight against Political Medicin. It is Kultur personified. Kil it by educating the people, not by getting the drunkard drunk. Just now Political Medicin is drunk with new wine, but soon the "As a War Mesure" wil hav past and then be redy.

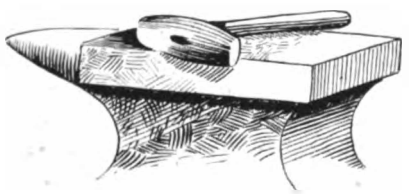
STAND FOR AND ENCOURAGE EVERY MOVEMENT THAT STANDS FOR FREEDOM IN AIDING AND HEALING THE SICK AND AFFLICTED.

STAND BY WHAT IS RIGHT, THO IT MAY TEMPORARILY BE TO YOUR DISADVANTAGE IN SOME WAYS.

STAND BY THE AXIOM THAT *RIGHT* MAKES MIGHT.

STAND BY THOSE WHO AR FIGHTING TO CRUSH "KULTUR," WITH ITS MOTTO "MIGHT MAKES RIGHT."

STAND BY THE VISION OF A UNIVERSAL DEMOCRACY—A DEMOCRACY IN MEDICIN AS WEL AS IN POLITICS.



PART ONE

"We cannot be hamperd and confined within the narrow walls of any restricted method of practis, which excludes all that some exclusiv company of persons may not approve. Freedom of thot and action within rational bounds should be demanded by all who embark in any healing ministry, or they wil find their usefulness painfully limited." —*Babbitt.*

KEEP MOVING

He who is silent is forgotten; he who does not advance falls back; he who stops is overwhelmd, distanst, crusht; he who ceases to grow greater becomes smaller; he who leaves off givs up; the stationary is the beginning of the end.—*Amiel.*

PART ONE. LECTURE I.

SOME NATURAL FENOMENA AND THEIR RELATION TO MAN.

PRELUDE

"Nature Never Says One Thing and Science Another."

So great is the fear among scientists that they may tred in unknown paths or that they wil step aside from old and recognized filosofy, that some of the greatest natural truths ar hidden from those who could make the best use of them. It is to be hoped that the time wil come when scientific minds wil be more open to receive new filosofies, even tho they ar not *all* wel founded. Ultra-conservatism is a barrier to progress. However, truth cannot be held down by those in authority.

It is a noteworthy fact that no new filosofies, theories, or innovations in science hav ever been recognized by the rank and file of scientists until the discoverer had been anathematized and abused and his discovery questiond and ridiculed.

The practis of medicin has been no exception to this custom. Hippocrates, Galen, Harvey, wer all told that their discoveries wer impossible. Semmelweis, who gave antisepsis to the world, was clubd into his grave, altho afterward a monument was bilt to his memory. Simpson, Morton, Wells, the discoverers of anesthesia, wer ridiculed and abused.

The assertion that "ordinary minds usually condem everything that is beyond the scope of their understanding" seems to be true. The wel known saying that to be free from criticism one must say nothing, do nothing, and be nothing applies to all lines of scientific work. This state of affairs must eventually change, but "the secret of reform lies not in revolution but in evolution—in unfolding along the axis of growth."

"The man who really grows great is not the man who thinks he knows it all, but the one who never forgets that

each day reveals a new force, a new method. It is the man who feels the need of lerning more, and is open to new convictions."

The scientific world is hungry for facts which can be proved, not for arguments which convince no one.

A filosofer in exploring the unseen first sees it on the horizon, much as the sailor at the masthed spies the distant land.

"To reach knowledge by 'pure reason' is as impossible as to reach the sun with a stepladder."

To acquire knowledge without study is like lerning to speak French from a traveler's guide book.

To cultivate a tecnic without practis is like lerning to swim without water.

"While theory is aimless and impotent without experimental check, experiment is ded without some theory passing beyond the limits of ascertaind knowledge to control it. Here, as in all parts of natural knowledge, the immediate presumption is strongly in favor of the simplest hypothesis. The main support, the unfailing clue, of fysical science is the principle that, nature being a rational *cosmos,* fenomena ar related on the whole in the manner that conceptual reason would anticipate."

"First comes hypothesis, then the accumulation of data, and finally, when all available evidence is in, rejection and the adoption of fresh hypothesis, or modification, or verification."

"A bundle of disconnected facts is only the raw material for an investigation; their mere collection is the very erliest stage in the process; and even while collecting them there is nearly always some system, some place, some idea under trial."

So, my work is the culmination of long years of investigation, experimentation, and application. Now I am able to demonstrate in minutes what it took me years to work out. This system, based on natural fenomena, is a system that every progressiv physician should understand and be able to employ; but without application it cannot be lernd any more than microscopy, astronomy, or any other science.

That the subject is a broad and interesting one, there is no doubt; and its possibilities ar limitless. Nature in her own laboratory has provided us with every means for diag-

nosing, curing, and even preventing disease, if we only knew how to interpret her.

When I first mentiond my discoveries to scientific friends, they cautiond me to not write about them nor mention them in public, lest they be ridiculed. They advized me to wait until time enuf had elapst and experiments enuf had been made by others to fortify me against the "ridicule of scientists."

Little by little my colleags induced me to teach them my work. Some wer selfish and did not want others to know about it, but my discoveries wer useful and helpful to me and I wanted others to be benefited by them. I cared more for humanity than for the "ridicule of scientists," so ventured to publicly demonstrate my discoveries. The "green eyed monster" is sometimes the cause of "caution among scientists" rather than real humanitarianism, or "science."

Life is too short to keep "under a bushel" that which wil help any human being.

Suppose any discovery does not help every one but wil help a few, is it "scientific" to keep those few from being benefited? I say most emfatically, NO!

What is science today is proved many times to be a "scrap of paper" tomorrow.

Who is to judge as to what is "scientific?" Surely those who make commercialism their god cannot judge. Surely not the hide-bound book worm who cannot see beyond his shelvs of books. Surely not the "college professor" who has held his job thru "relativs and friends."

Who then shal judge as to whether a discovery shal be kept hidden or shal be given to the world? The PUBLIC ar the ones to judge. They wil know sooner or later whether they ar being deceivd or not. *Give to humanity anything that wil aid HUMANITY.*

"Freedom of thot and action within rational bounds should be demanded by all who embark in any healing ministry, or they wil soon find their usefulness painfully limited."

Fig. 1

Fig. 1 shows the Passenger Pigeon (ectopistes migratorius)

This wonderful bird formerly bred from the southern Canadian provinces to Kansas and Mississippi and winterd chiefly thru Arkansas and North Carolina southward to Florida and Texas. The Passenger Pigeon was undoubtedly one of the greatest zoological wonders of the world. Formerly the most abundant gregarious bird ever known in any land, ranging over the greater part of North America in innumerable hosts, it has now disappeard to the last bird. Some "flocks," early in the nineteenth century, it was estimated, containd as many as 2,500,000 individuals.

The last bird, a female, was born in 1885 and died in 1914, aged twenty-nine years. At its deth the species became extinct.

I yet remember the time when thousands of nets wer spred all along the Atlantic seaboard for catching these beautiful birds.

Early in the nineteenth century the markets wer often so glutted with these pigeons that they could not be sold

at any price. Scooners along the Hudson river used to be loaded in bulk with them for the New York market, and later as cities grew up along the shores of the Great Lakes, vessels wer loaded with them. All this slaughter had no visible effect on the numbers of pigeons in the west until railroads wer bilt thruout that country and the demand of a rapidly increasing population stimulated the netters. Every great market from St. Louis to Boston receivd hundreds of thousands of barrels of pigeons every season. The New York market sometimes took one hundred barrels a day without a break in the price. Often a single western town near the nesting grounds sent millions of pigeons to the market during the nesting season.

Nesting after nesting was broken up and the young destroyd until about 1878 the wild pigeons, driven by persecution from other cities concentrated in the few localities in Michigan where a tremendous slaughter took place. These wer the last great nesting grounds of which we hav any record.

Many times the birds wer so persecuted that they finally left their young to the mercies of the pigeoners, and even when they remaind most of the young wer kild and sent to the market, and thus the hosts of the adults wer decimated.

The wild pigeon in nature probably livd about five years but in confinement or where they wer not tormented by hunters, they often livd to be over twenty-five years old.

Erly Observations

My observations of fysical fenomena date back to my boyhood. In 1876, while watching a flock of wild pigeons (ectopistes migratorius, Fig. 1, now extinct) an old trapper and hunter cald my attention to the fact that these birds "knew the points of the compass." To prove this, he liberated a few birds from his snares. They flew straight up in the air, made a few turns, and then "made a bee line" for their homing places. This experiment made such an impression upon my mind that I made it a practis to observ all birds and animals to see if they "knew the points of the compass." I sercht books on the subject, and incidentally delvd into fysics.

In 1882 when I began the study of medicin, I talkd

with my preceptor regarding my observations. Being interested in nature study, he encouragd me to carry on my investigations with the result that part of his omses was turnd into an aquarium and aviary to make room for my collections.

My study of carrier-pigeons showd that they made flights by night as wel as by day. This seemd to prove that the magnetic fields of the erth influenst a "natural magnetic tendency" in animal life.

One day I found a carrier-pigeon that could not orient itself. It was sick and died. I examind it and found a condition that I now know was tuberculous. My preceptor said he thot "weakness had changed the bird's emanations in such a manner that the erth's magnetic fields could not be correctly reported to the brain."

Little by little I lernd that the magnetic fields of the erth influenst very many different living beings. I then began to experiment to see if the same wer true of human beings. I tested people with their eyes coverd, to see if they knew in which direction they wer facing, and found many who did.

Later it was my good fortune to hav a very lerned preceptor who had spent years in India. He was a keen observer of natural fenomena and had lernd much from the Hindus and other oriental people. He said he had often notist the faculty of orientation in the "savages" and in many animals of the jungles. He said the Hindus had taut him that there wer life emanations in humans, and that they wer able to demonstrate this. He reasond that all living beings gave off vibrations of energy and that the magnetic fields of the erth probably influenst these emanations of "life force," "vital force," "life emanations," "aura," or whatever they might be cald.

Observation of Aura or Vital Force

From my erliest recollection I hav been able to observ aura or what some call "life atmosfere" in living beings and in the living vegetable kingdom. My first recollection of this faculty, which I then supposed every person possest, was when watching a cat. I made the remark to some of my playmates that the cat lookt "bluer" that day than common. Just then a dog came up to tease the cat and I notist the aura changed color and took on a "reddish hue." Later

I notist my pet pigeons. In the mating season the color of the aura of the male was changed, and when the pigeons wer "making love" to each other I could distinctly observ a change in the color of their aura.

When watching the budding trees or plants, I always notist a distinct aura about the budding part of the plant which I did not observ when the budding process was not going on. (See chapter on Aura or Magnetic Atmosfere.)

Erly Diagnosing by Aura

Our family physician was an "eclectic." He treated as he elected to, and was not held down by any "pathy." He was cald a "quack" because he *cured* cancers by means of plasters, herbs and roots. A neighbor was wearing one of his plasters once when he cald on us and I notist a peculiar "violet" aura about the plaster which was coverd with a white cloth. The next time the physician stopt to see what "new things" I was doing, I mentiond what I saw about the white covering on the neighbor's cheek. He was interested at once and told me to come to his offis some time to spend the day. I did so and he showd me many persons with white coverings on various parts of the body. Some showd the "violet" color and some did not. He said all those on whom I observd the "violet" color had cancers, and he would pay me a fortune if I could teach him how to do it. I told him I did not know how I did it and did not see why he could not do the same. Later he told me he would teach me medicin if I would come with him and diagnose for him. I did so and for eighteen months I was able to be of great assistance to him.

Another physician, who saw what I was doing, offerd me my board as wel as instruction if I went with him, and I accepted this offer.

I tried to explain to the physicians how to "translate body energy" but could not do so. I found nearly all diseases could be diagnosed in this manner but it was too "subjectiv." I set out to find a more objectiv means of teaching the work to others, and was years working out the method of diagnosis I now call *Bio-Dynamo-Chromatic Diagnosis.*

Conduction of Energy

In 1876 I took two tin boxes, knockt the bottom out of each, and in place of the tin bottom, bound on a piece of an

old drum-hed. (Fig. 2). I pierst the center of these drum-heds and thru them past a fishline and tied a wooden button to the ends of the fishline. I used this device as a telefone, and by properly hanging the cord I could talk with my comrades many yards away. I tried taking a wet cloth and soaking the cord to see if it would carry the voice any better. I then askt one of my companions to put a cat at one end of the box to see if I could hear it pur. When I put the end I held to my ear, I notist what I thot was a "breeze." I notist this "breeze" before I herd the pur of the cat. This struck me as rather peculiar and I had my companion try again putting the cat up, but with its side to the receiving end of the crude transmitter. I did not feel the "breeze" the same as I did when the cat's nose was put into the transmitting box. I askt the boy to point his finger into the box to see if I could feel the "breeze" from his finger, and I did feel it altho the boxes wer several yards aparts. Since that time I hav frequently demonstrated the fact that the energy from one animal or person wil influence the energy of another, tho quite a distance apart.

In 1884 I constructed another kind of energy or aura conductor. (Fig. 3). This was made by taking two metal funnels and passing a cord into their outlets and fastening these cords to buttons so they would not pul out. For this apparatus I used a much hevier cord than I used in my crude telefones of years before. I found when this small rope was dry I could get no "breeze" when I was trying to carry the energy from one person to another, but when it was soakt with water I was able to easily conduct the magnetic energy or aura.

At that time I also discoverd many peculiar fenomena regarding the conduction of energy from one person to another. (I hav been told that the Hindus hav for centuries been able to conduct energy very long distances from one animal to another.)

My next change in aura or energy conductors (Fig. 4), was made in 1904. These conductors I made a little better and fastend two bottle-filling funnels to a cord having the receiving end of one funnel pointing so as to be a receiving terminal, and the outlet end of the other funnel being so placed that it would be a dispersing terminal. By wetting the cord I found I could very redily carry magnetic energy or aura from one person to another or from one part of the

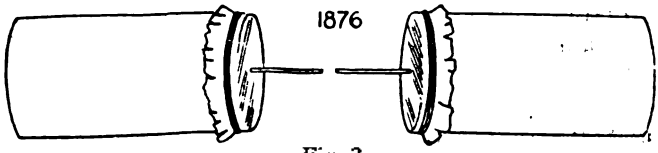


Fig. 2

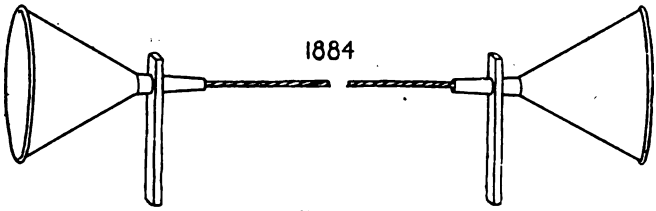


Fig. 3

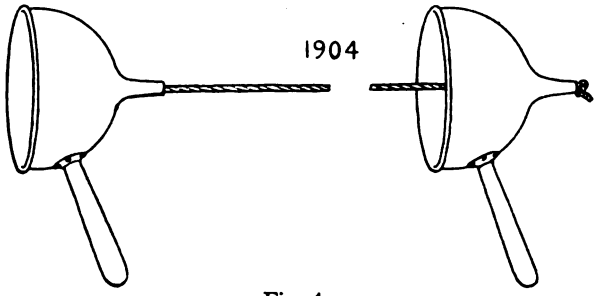


Fig. 4

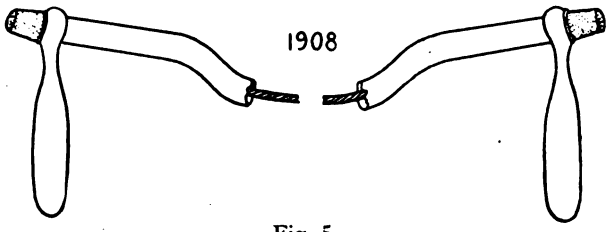


Fig. 5

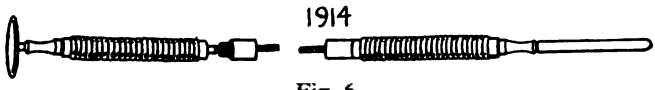


Fig. 6

Evolution of my Energy Conductors

same person to another part, thereby causing a "denting" of the aura at the dispersing terminal.

This "denting" of aura has an appearance similar to blowing into a colum of smoke. This fenomenon is plainly demonstrated when taking the aura from the fingers and transmitting it to the aura from the armpit. (See chapter on Aura.)

So far my aura or energy conductors wer made in a ruf manner and I constructed them myself. I devized many other styles but those illustrated wil giv a general idea of the evolution of this work.

In 1908 I had some solid rubber handles made and drild out as shown in Fig. 5. It wil be notist that these holes wer drild on a slant so the tubing would not bend at too great an angle. In the holes in these rubber handles I closely fitted a rubber tube, this tube at first being about six feet long. Thru this tube I past a big cord and tied a knot at each end. For no other reason than to make it look shipshape and complete, I put aluminum thimbles over these knots, as shown in the illustration. By soaking the cord or rope with water I was able to conduct energy from one person to another or from one part of a person to another part with great facility. During these experiments, I tried twisting wire around this piece of rope and found that facilitated the work. Later I used a very large copper wire, such as is used in the electric power stations, and past that thru the rubber tubing. I found that conducted energy better than anything else, but it was not practical. A good sized copper wire thru a flexible rubber tube I found to be the best. Whether the aluminum thimbles at the end aided in conducting this energy, I do not know.

At this time I first used wet rattan, willow, or bamboo for conducting energy, and found that these materials, when thoroly soakt with water, made extremely good conductors, provided dry handles wer put on them so as to "insulate" them.

I experimented on animals of various species and found that I could conduct magnetic energy from a cat, dog, fowl, etc. (Fig. 126), and that energy so conducted would deflect the "streamers," or life emanations from a human, if a certain tecnic wer followed.

I continually improved on these aura or energy conductors, and in 1914 constructed the energy or aura conductor

shown in Fig. 6. It wil be notist that these handles wer constructed so that the metal tip of the battery cord would not touch the hand. It wil also be notist in the energy conductors of 1908 that metal would not touch the hand; and the hand is at right angles to the receiving and dispersing terminals. I did this for the reason that I had found that if the hand wer pointed in the same direction as the conductor I could not tel whether the energy came from the hand or from the end of the conductor.

In my erlier models I used ordinary dry wood for the handles but in 1908 I used the polisht rubber handles. I found that I could pass wet bamboo or rattan thru this rubber tubing and conduct the energy or aura better than without the tubing. The form of the aura or energy conductor made in 1914 in some ways was an improvement and in other ways it was not, as the handles wer parallel with the metal terminals.

In an extensiv series of experiments with extremely sensitiv galvanometers, I found that aluminum gave to aura or energy past thru it a different "polarity" than any of the other ordinary metals; and as many of the wire terminals wer nickel-plated and many wer not, I found it was obligatory that the same kind of metal was on both ends of the aura or energy conductors. As I had previously used aluminum (using aluminum funnels as soon as they wer put on the market), and as aluminum seemed to be light and an easy metal to handle, I made the terminals of aluminum.

After a long series of experiments with the various metal terminals, I found that any good conducting material, such as copper or brass, would do as wel for the terminals, provided they wer kept bright. When they wer oxidizd they did not last as wel. Therefore I concluded that aluminum was the most practical and best for terminals. I formerly thot that these terminals helpt to augment the energy given off, but now I am not satisfied that they do.

The larger the area of the conducting material, the easier is the energy carried thru. This same law applies to the conduction of electrical energy.

In my experiments I found that the terminals of these conductors should not *both* touch the skin, for the reason that the energy would be carried in either direction according to which terminal receivd the greater energy. The same

principle applies to energies of all kinds—the greater energy wil deflect or influence the lesser energy.

Fig. 7 illustrates my energy conductor of 1915-17. This was devizd with the idea that a small bar magnet of about a six-inch deflecting power could be successfully used for differentiating "polarity" of tissues.

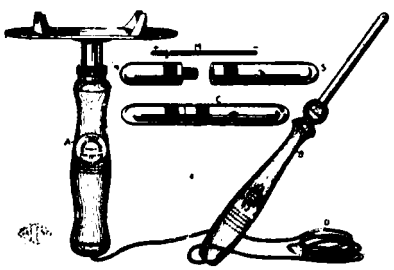


Fig. 7. My Energy Conductor of 1915-17. *A* is the dispersing side and *B* is the receiving side. *D* is a battery cord. *M* is a steel magnet of a 6-inch deflecting power and *C* is an aluminum shel or case for holding the pole-differentiating magnet. As I hav found colors far superior to magnets for differentiating energies, I hav abandond this style of Energy Conductors.

Because of the fact that it is almost impossible to repeatedly get steel of the same temper and magnetic retentivity, I was obliged to abandon the use of this style of pole-differentiating energy conductor. This is more fully explaind under the hed of magnetics.

I hav found that radiant colors ar far more reliable for dissipating energies than a magnet.

Fig. 8 illustrates my latest style of energy conductor. It possesses all the good qualities of my other energy conductors and many superior ones. It wil be notist that the patient or receiving terminal has a flat surface, while the subject or dispersing terminal is pointed.

They ar made of hevy rods of aluminum placed in a highly polisht hard-wood handle in such a manner that the hand wil not touch any part of the metal. These terminals ar made extra long so their free ends wil be quite a distance away from the hands of those holding the handles. In the ball carrying the aluminum rods is placed insulating material to prevent the energy from going in only one direction. I hav found that a battery cord meets the ordinary requirements for an energy conductor.

This energy conductor is so made that it comes apart so it can be easily carried in a physician's satchel or coat pocket. The use of this energy conductor is more fully explaind in the text.

Conducting Vital Force without Conductors

By employing specially made apparatus of great sensitivness and condensers of a special type, I can conduct energy without wires comparativly long distances.

With wires and special condensers, vital force can be conducted great distances—perhaps around the globe.

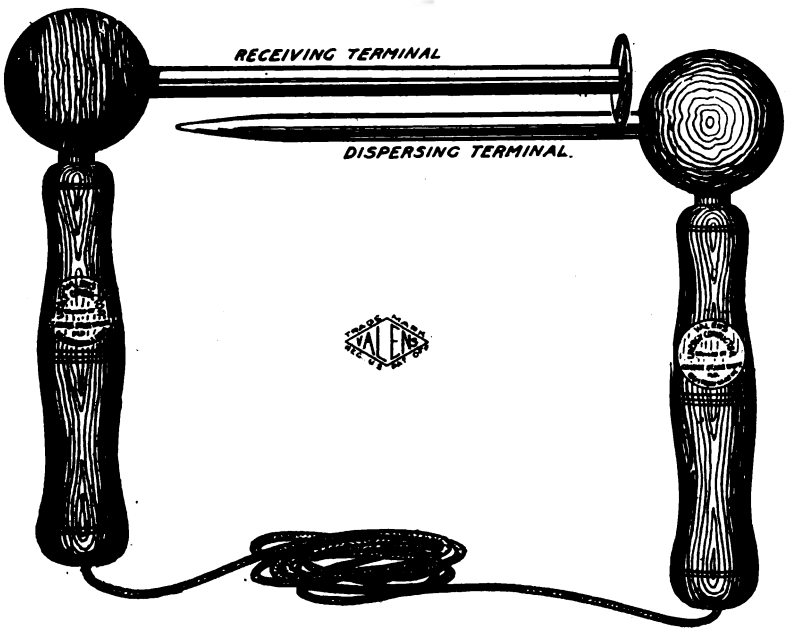


Fig. 8. My 1918 model Energy Conductor. The terminals ar of hevy aluminum—the receiving terminal carrying a one-inch disc, while the dispersing terminal is pointed. This arrangement greatly facilitates the gathering in and sending out of energy. Back of each terminal is insulating material so placed that the energy must go in an opposit direction. The handles ar so placed that the hands holding them must be at right angles to the terminals.

Ded Material has no Aura, Vital Force, or Magnetic Atmosfere

In 1904 I made arrangements with the dissecting room manager of one of the large eastern medical institutions to spend more or less time every week studying cadavers as they wer brot from the morgue. I would find the cause of deth from the certificate and then see if I could detect any aura, or if I could conduct energy from these ded persons. Altho I spent very many hours in the "ded house" and examind scores of cadavers, I was never able to observ an *aura* from a ded body. Neither was I able to conduct energy that would indicate the disease from which the person died. For instance, I hav taken cancerous brests, tuberculous lungs, etc., and hav tried to conduct the energy from these various diseasd organs. In every instance the energy would be the same as the atmosfere in which the organs wer placed, or the same as that which comes from decaying material.

I conducted these experiments because some investigators had told me that a person who had died from tuberculosis gave off a different energy than one who had died from syfilis, etc.

While the body is living, the energy is different, but when the body is ded I hav never been able to obtain any vital force or aura from it.

We must bear in mind that nearly the entire body of any animal is organic material, and organic material of any kind when ded and fermentation has ceast, givs off energy the same as the atmosfere in which it is placed.

Disease Changes Electrical Resistance of Tissues

One fenomenon I hav notist and perhaps that is what has confused many investigators—that is, the *resistance* of diseasd tissue. If an electric current is past thru any tissue showing fibrous degeneration, its resistance is greater than if it is affected with a colloidal degeneration. In other words, the resistance varies with the condition of the tissue whether it is normal or abnormal, as wel as from many other factors.

I hav also observd that the mental condition of a person wil many times alter the resistance of the skin.

Direction Changes Aura

For many years I hav observd that the "streamers" or radiations from the body wer deflected when some subjects faced north or south in a different way than when they faced east or west. (See chapter on Aura.)

I now know this change is causd by the magnetic meridian. This is fully discust under Aura or Magnetic Atmosfere.

Air-Colum Vibration

A vibrating colum of air, its length being constant, changes its pitch in direct ratio with the tension of its limiting ends. For example, the pitch of a violin, or other string instrument (Figs. 9 and 10), varies directly with

Fig. 9. My erly home-made Sonometer for differentiating pitch in air-colum vibration.

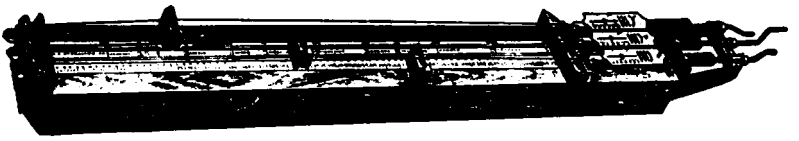


Fig. 10. Prof. B. E. Smith's style of Sonometer. C. H. Stoelting & Co. of Chicago bilt this one for me.

its tension—the greater the tension, the higher the pitch. In this instance the string is one end of a vibrating colum while the belly or sounding board of the violin or other instrument is the other end. The distance between the two ends is constant.

A vibrating colum of air, the tension of its limiting ends being constant, changes its pitch in inverse ratio with the distance between the limiting ends. For example, if a tambor is vibrated over a solid table top (Fig. 11), the pitch wil vary inversely with its proximity to this table top—

the greater the distance between the limiting ends, the lower the pitch.

On these two principles of air-colum vibration is based the construction of all musical or tone-producing instruments. Even the voice is a modification of the same principles.

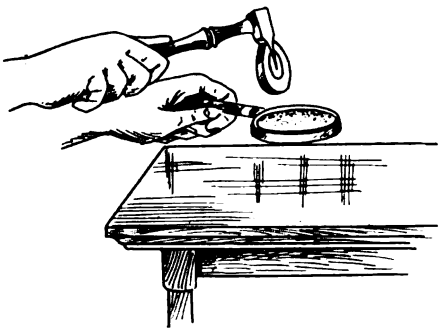


Fig. 11. Illustrating the 2d law in air-colum vibration. The tambor is held over a solid table top and by varying its distance from the table top, the pitch of the vibrating colum of air is changed.

As time went by, I experimented with vibrating colums of air, and would often vibrate a colum of air over a person's face or body (Fig. 12). At times I observd a variation of pitch altho my devices wer the same distance from the body each time. These experiments I carried on for years and finally found that *the variations of pitch took place when the individual changed position as regards the points of the compass.* For example, when a person faced

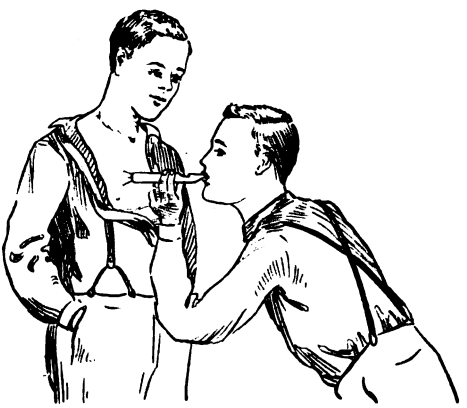


Fig. 12. Showing how I practist with whistles in my erly experiments to lern the laws underlying air-colum vibration.

east or west I observd one note; and when he faced north or south, I observd another note. At last the dream of my boyhood was realized—I was able to *prove* that the magnetic meridian energy did affect the living body in some way.

Devices to Demonstrate My Findings

Among the erly devices I used for "sounding" over the body wer whistles of a special construction, (Fig. 12) so made as to giv a low tone—like the croaking of a bullfrog or the blat of a calf. Fig. 13 shows one of these low-register "horns" in use.

Fig. 13. Showing my refined Diagnostofone or low-register horn in use. Tissue paper pasted under a 2-inch plank can be detected by this instrument. Notis how the operator holds himself uniform. Also notis how the operator keeps his foot on the switch, so the light can be put on or off without moving the Diagnostofone on the body. As the indicated color is radiated on the bare chest and abdomen of the patient, the change of pitch can instantly be recognized.

Fig. 14. shows a low-register organ pipe in use in a modern fysical laboratory.

The latest and most unique of all my horns or pipes for air-colum vibration is shown in Fig. 15. This is scientifically constructed and imitates a calf's blat—a very long wave of vibration. The reed is made of brass. I hav named

Fig. 14. Vibrating air thru a wooden organ pipe over the body. As this large turntable is automatically revolvd the change of pitch in the organ pipe can be recognized. If the subject is helthy, the pitch rises as soon as she faces due north or south. If she has tuberculosis, or other profound toxemia, the pitch rises as soon as the indicated color is radiated on the bare chest and abdomen, while she is facing exactly north or south. Notis that the patient is grounded.

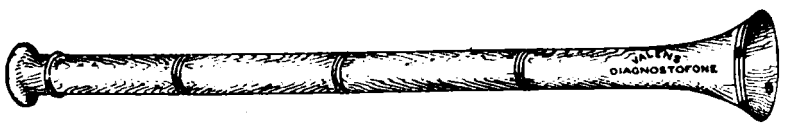


Fig. 15. My low-register horn which I call Valens Diagnostofone. The holes about the flange ar cald "bleeders" and allow the air to go out when the flange is prest firmly against an object.

this special horn "Diagnostofone" and its use wil be explaind as we procede. It is shown in use in Fig. 13.

Another of my erly devices to demonstrate the change of pitch over the body, as it turnd from east or west to north or south, is shown in Fig. 16. It consisted of a pasteboard box so shaped as to fit the contour of the abdomen. By

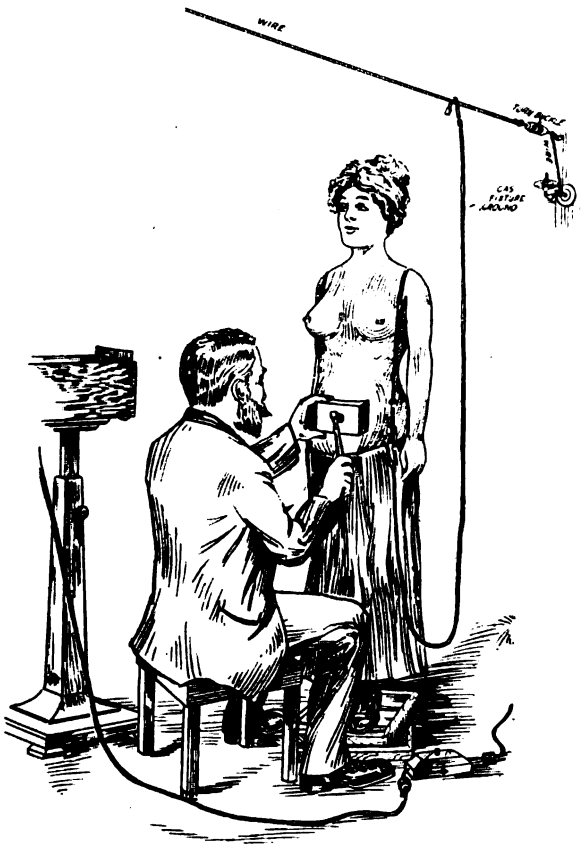


Fig. 16. One of my erliest devices for translating tension over the body. It consists of a pasteboard box cut out to fit the contour of the abdomen. The end of a finger can be used as a plexor or hammer.

tapping this sounding board with a middle-register piano hammer, the variation of pitch could easily be distinguisht as a robust individual turnd from east or west to north or south.

Another erly device was a lamp chimney with vellum over it. The air-colum tube shown in use in Fig. 17 is a modification of the glass tube, or lamp chimney.

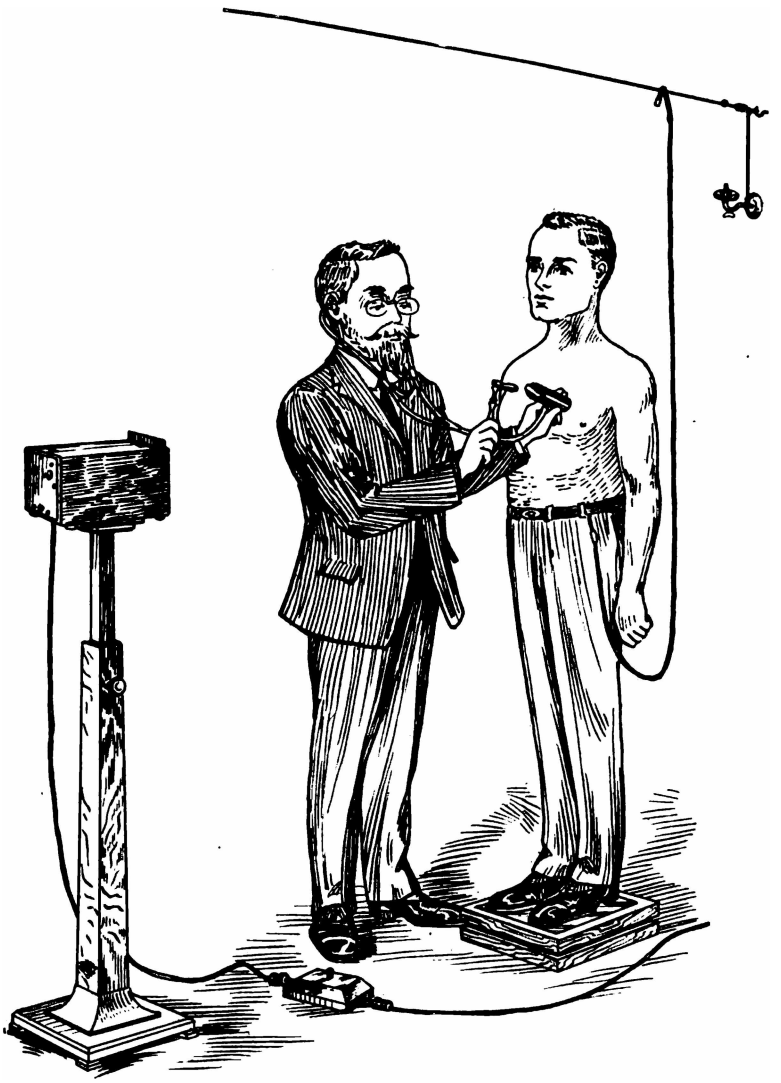


Fig. 17. Showing the use of my Air-Colum Tube to demonstrate the elicitation of the MM VR—the change of pitch as the body faces from east or west to north or south.

Fig. 18 shows a large conch shel. Nearly every child has put similar shels to his ears "to hear the ocean roar." Years ago I observd that when I used one shel over each ear, as shown in Fig. 18, and faced east or west and then turnd to face north or south, there would be a change of pitch. It was a long time before I lernd why I would not always observ the same change. Finally I lernd that the experiment had to be carried out in a dark room or on a cloudy night. Why, I did not then know but now I think I hav the solution. It wil all be explaind as we procede.

Conch Shel

Fig. 18. Showing large conch shel and also two of them in use. As the tension in the middle ear changes, so does the pitch of the "ocean roar" change when a person is grounded to metal and in a dark room, provided he is helthy.

Step by step I developt the tecnic of air-colum vibration and devized various instruments to prove that the magnetic meridian changed the tension of the blood vessels in the living body.

I notist that the change of tension of a drum hed changed the pitch of an air-colum vibrated over it, similar to the change notist in a colum of air vibrated over the body as it turnd from east or west, to north or south. From this observation, I was able to construct special drums on which to demonstrate the work. These drum-like devices I call "practis drums." (Fig. 19.)

After having examind very many persons to see how the magnetic meridian affected them, I found that I must lern *why* it would influence some, and not all. By carefully collecting data and making comparisons, I found that only "helthy"

individuals gave the change (which I now call the magnetic-meridian-sympathetic-vagal reflex—MM VR) while they faced parallel with the magnetic meridian (MM) that is, north or south.

These experiments coverd a period of over fifteen years—making two or more experiments daily.

Among the first I found, who would show no change, when facing in the magnetic meridian, was a lady who had tuberculosis fairly wel advanst. Later I found that syfilis had the same power of inhibiting the effects of the magnetic meridian upon the body.

In December, 1908, I conducted a series of experiments with vibrating air colums thru wooden pipes. (See Fig. 14). I had a helthy looking patient over whose body

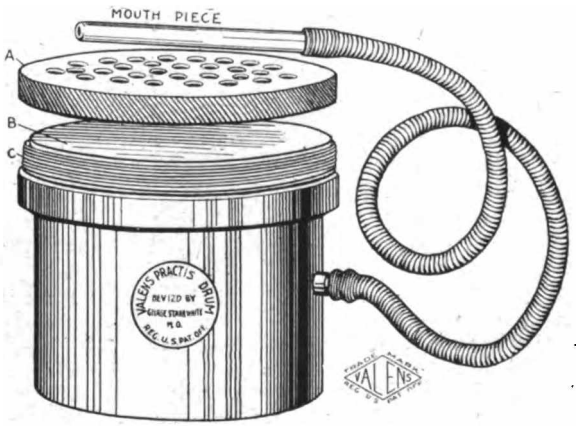


Fig. 19. The drum I devized for studying air-colum vibration. This drum I call Valens Practis Drum. It is made of solid, bored-out aluminum. *A* is the perforated top that screws on *C*. *B* is a vellum top. The tension within the drum is changed either by sucking or blowing thru the mouth piece.

I could notis no change of pitch while sounding an organ pipe—no matter in what direction he faced. I observd an aura of a "reddish hue" emanating from the back of his hed. This same color I had previously notist in syfilitic persons, being especially wel defined over localized lesions. From these findings I diagnosed the case as syfilitic gumma located in the cerebellum.

As this young man's relativs would not believe my diagnosis, especially from the way I had diagnosed the case,

I offerd to pay for the services of an expert diagnostician, provided his diagnosis wer not the same as mine. Accordingly, he was sent to an expert diagnostician of New York City and his diagnosis coincided with mine. The young man died of syfilitic tumor in the cerebellum.

Later a young lady came to me to be treated for "cancer of the brest." I tested this lady with my organ pipes (Fig. 14), or colum-sounding tubes, and obtaind a decided change of pitch as she turnd from east or west to north or south. I also observd that the color of the aura from her brests was normal, that is, "steel blue" insted of a "blue violet" which is the aura color of cancer. I therefore diagnosd her case as a benign, adenomatous enlargement of the

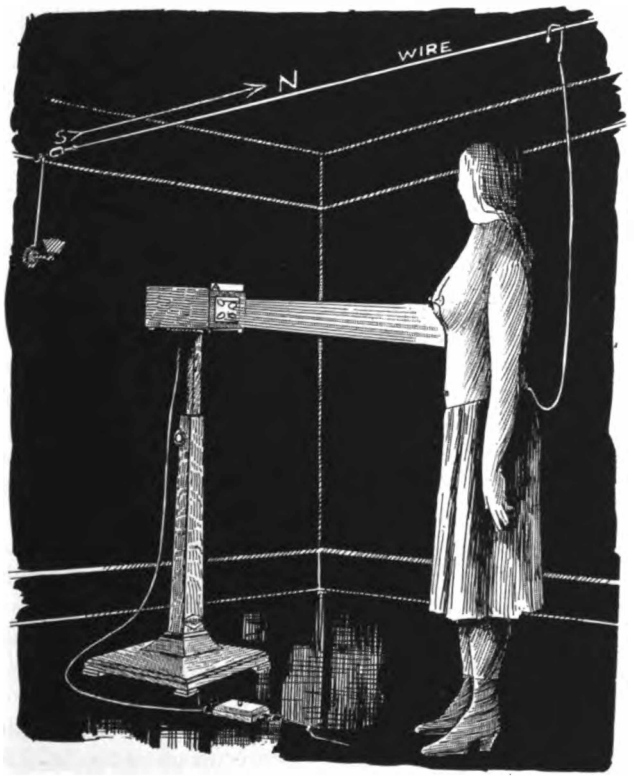


Fig. 20. Subject facing north or south and grounded in a dark room. Ruby light thru the A-Chromatic Screen wil obliterate the effects of the MM on the helthy subject, if it is shed on the bare chest and abdomen.

brest. I treated the brest with powerful light for a few weeks and it was cured and has remaind cured.

(The color of the aura from a wel defined tuberculous lesion is "cyan blue.")

Color to Diagnose Disease

Now came the time when I could put into use much that I had lernd of fysics. I reasond that as the aura or life emanations from a helthy body wer deflected by the magnetic meridian, and that as the tension of the body organs was changed by the same energy, then some other energy must be able to act on the "animal energy" or "life force."

After trying sound waves of all kinds, I began to work with colors. The first color that I used was the ruby employd in my fotografic dark room. This I found *obliterated* the effect of the magnetic meridian on a helthy subject (Fig. 20). This ruby would also enable the magnetic meridian to act upon one suffering with tuberculosis the same as if he wer helthy.

Many persons gave this "ruby reflex" when they complaind only of being tired, nervous, etc., and later it was found they had tuberculosis. I also found that a person with cancer gave this "ruby reflex."

Altho I hav tested many thousand cases with the ruby light,I hav found no diseases except tuberculosis and cancer that would respond to that color. Later I discoverd a color that would differentiate cancer from tuberculosis. I employd every color I could find or make, but found that only dark-room ruby would diagnose tuberculosis or cancer and that only a certain shade of orange would differentiate cancer from tuberculosis.

I found that tuberculosis could be diagnosed by this method at the very inception of the disease, and before a diagnosis could be made by any other known method. Time would prove that the diagnosis was correct, and the patient could hav been more redily cured, had others believd my findings wer reliable. On the other hand I hav found many cases which had been treated for years as tuberculosis, which wer not tuberculous and which wer redily cured when the correct diagnosis had been made.

The same holds true of cancer. I hav been able to prove that at least 70% of cases diagnosed as cancer by laboratory

methods wer *not* cancer, and time has proved my diagnosis to be correct. I hav also found that many cases which wer diagnosed as simple growths wer cancerous growths, and time has proved the diagnosis to be true.

By degrees I found that other radiant colors would enable me to diagnose other diseases until now I hav a wel defined plan of diagnosing the most prevalent and the most dangerous toxemias.

By using various tints of the diagnosing color, I am now able to show the exact stage of the disease.

I hav never yet found a person suffering with any malignant disease, who would giv this magnetic-meridian-sympathetic-vagal reflex (MM VR) when facing from east or west to north or south, unless some radiant color wer employd.

This method of diagnosis I hav termd the *Bio-Dynamo-Chromatic* method (Bios, meaning life; Dynamis, meaning force; Chroma, meaning color).

Lecture II discusses the fysics underlying my Bio-Dynamo-Chromatic (B-D-C) method.

SOME NATURAL FENOMENA AND THEIR RELATION TO MAN (Continued).

"The principal part of anything is the beginning."

The foundation of any structure must be wel laid even tho the digging be hard. It is for that reason that in this lecture the *fysics* underlying my Bio-Dynamo-Chromatic method of Diagnosis and Therapy must be discust.

NATURAL RATES AND MODES OF MOTION

According to the world's greatest scientists, "matter" is only a "rate and mode of motion." As soon as its "rate and mode" ar changed, the form of matter is also changed.

According to this recognized theory, each cel or group of cels in the body has its own caracteristic rate and mode of motion, which is normally constant. In other words, each part of the body has its "normal celular rate and mode of motion."

On the other hand, if any part of the body becomes diseasd, there is a change in the rate and mode of motion of the cels and in turn of the part affected.

It is a generally conceded fact that one form of motion interferes with or changes another form of motion. Therefore an abnormal rate and mode of motion in one part of the body wil manifest itself more or less in any other part of the body.

It is a proven fact that motions from the surface of the body ar influenst by the motions within the body, whether they ar fysical or mental. It seems as tho emotions of all varieties ar merely manifestations of a celular rate and mode of motion.

As the celular rate and mode of motion of the individual is changed, so is the celular rate and mode of motion of those with whom he comes in contact changed.

"Moods" ar manifestations of a celular rate and mode of motion, consequently *"cheerfulness is the principal in-*

gredient in the composition of helth;" because cheerfulness is a manifestation of a normal celular rate and mode of motion.

"Il-nature" is a prolongd deviation from the normal rate and mode of motion, therefore is wel namd "a running sore of the disposition."

The casm between life and deth is only a matter of motion—electric or otherwise.

There is a change in the rate and mode of motion in all life which, if it comes within the "deth-line" means disease or unrest of tissue, while beyond the deth-line, it means deth.

As the ratio between normal and abnormal rates and modes of motion in the body differ, so does the ratio between life and deth differ.

Anything that interferes with the normal celular rate and mode of motion must interfere with the helth of the living being.

Altho the "life-impulse" as wel as electricity, gravitation, and other natural fenomena ar known only by their manifestations, yet we know a few of the laws that govern them.

From this reasoning, we might logically conclude that *all forms of life differ from each other only as their celular rates and modes of motion differ.*

From this theory, personality as wel as natural likes and dislikes can be explaind. From the same theory, we can also understand why all living beings require rest and sleep. Sleep might be compared to the charging of a storage battery.

"Old age" is not exprest in years, but by the slowing up of the celular rates and modes of motion in the body. This is another way of expressing the axiom, "Conservation of energy spels longevity."

Magnetic Development

Emerson in his Essay on Compensation uses the word "polarity" as an antithesis. He says: "Polarity, or action and reaction, we meet in every part of nature; in darkness and light; in heat and cold; in the eb and flow of waters; in male and female; in the inspiration and expiration of plants and animals; in the equation of quantity and quality; in the fluids of the normal body; in the systole and diastole of

the hart; in the undulations of fluids and of sound; in the centrifugal and centripetal gravity; in electricity and chemical affinity. Superinduce magnetism at one end of the needle and the opposit magnetism takes place at the other end. If the south attracts, the north repels."

Some scientists claim that the body cannot hav electrical centers nor be possest with "polarity," because the body as a whole is composed so largely of water and salt, which makes the interior of the body itself an efficient "conductor" of electricity. We must remember, however, that there is as much difference between living or bioplastic insulation and artificial insulation as there is between test-tube digestion and gastric digestion. In other words, the chemistry of living and ded organisms is not identical, neither is the insulation or conductivity of ded material to be compared with that of living material. Nature has a method of insulating her energy conductors in a way that man cannot duplicate. We must take nature as we find her and not try to interpret her to fit laboratory methods.

Celular Development

If we, as physicians, could know more of the development and fysiological processes of each organ of the body, and then of the body as a whole, we could much more intelligently treat any disease.

It is wel known that the human body is an aggregate of myriads of cels, estimated in number at twenty-six million five hundred thousand millions. Each cel has its own function to perform, and each cel is a part of a cel community and works for weal or woe.

The more we study the development of cels, the more we ar imprest with what is electrically termd "polarity." No one can witness cel division by mitosis under a powerful lens without thinking of the appearance of iron filings in a magnetic field. Ar they not both fenomena of "polarity?"

Electrical Analogy

As we look at the development of any species of animal or vegetable life, we find that one cel divides into another cel, and that again into another. If there wer not some controlling influence over these cels, they would all develop in the same way, and the organism would be all of a single

tissue without any differentiation between the ectoderm, the mesoderm, and the endoderm, or any of the structures develop therefrom.

In our modern way of thinking, the hypothetical "electron" (see foot note) is the smallest particle from which the atom is formd, and in turn the molecule is formd from the atoms. Each cel seems to be an electrical entity with positiv and negativ poles, and that entity appears to be the electron (?) As these electrons ar arranged in a specific manner, so ar the atoms, of which they ar a part, arranged to form certain definit lines of force. As the atoms in turn form the molecules, it is probable that they, from the arrangement of poles and magnetic fields, ar created in a definit internal arrangement according to the arrangement of the electrons. Inasmuch as the molecules form the cels those cels would be electrically and magnetically arranged according to the formation and arrangement of the electrons.

As cels divide and develop one by one, they appear to be limited in their development by electrical or magnetic conditions existing in their internal formation. This might be on the order of a multitude of galvanic cels connected either in series or in multiple, so arranged that when the amperage was of a certain degree the voltage would be modified, or conversely. Considering each cel as a great multitude of electric cels, this theory seems plausible, if the electronic theory is plausible.

By this arrangement, when a certain amount of electric force was exerted, or a certain quantity generated, the "electrons" would be affected in such a way that they would form different kinds of structure or different forms of the same structure. In this way we could formulate a reason for the definit manner in which cels develop. Sometimes we hav monstrosities or malformations. These might be causd by some electrical change having taken place at the time of development.

All atomic caracteristics can be quite satisfactorily explaind from the recognizd theory that the "electron" is always associated with an unvarying unit-charge of negativ electricity revolving within a sfere of positiv electricity.

*Personally I am not at all satisfied with the hypothetical "electron." I use the name, as so many believe it is an entity and only believe it because they hav had some one else think for them. Later on in the text I shal say more about this.

There ar, however, some weak points in the electronic theory and they wil be taken up in a special lecture.

As the universe is made up of electrical systems and, as many believe, our very atmosfere and form of life is governd by electrical changes in this universe, it is reasonable to believe that the animal body is made up of electrical systems, each system possessing its own "polarity."

The molecules would simply be an aggregation of electric batteries. The tissues in turn would follow in the same order as the tissues, inasmuch as they ar aggregates of the tissues and determin the caracter of the work. The collectiv organs, having co-related functions, form the body as a whole.

Electric or Magnetic Equilibrium and Helth

It would hardly be compatible to believe that the entire body was composed of one electric system; on the contrary it would seem as tho the body of any animal wer made up of separate electric systems or magnetic fields.

If this hypothesis be correct, the body, to be in helth, must be in electric or magnetic equilibrium or, in other words, must possess a normal celular rate and mode of motion. As soon as any one system in the body is in any way deranged so as to cause a change of "polarity," or an abnormal celular rate and mode of motion, that would mean unrest of tissue in that particular system. In the same degree as that sub-system wer deranged, so would the whole system be out of balance.

If the "polarity" or rate and mode of motion of any tissue be changed, dis-ease or unrest of tissue must take place.

During the evolution of matter from vegetable to animal life, electrical centers hav apparently been developt to control automatically the several sub-systems or electrical segments.

At first, we hav the nucleus of the cel to govern the cel itself, then a system of cels is governd thru the nervs or connecting wires by ganglia, or small nerv centers. As evolution progrest, larger nerv centers governd the sub-nerv centers, until eventually we hav what is cald the brain to govern the ganglia, or substations, thruout the organism.

If we accept this theory of "electronic unity" or normal celular motion, it wil be much easier for us to conceive

the idea that cromosomes in the cel ar an aggregation of "electrons" representing every other cel in the organism. In no other way can we explain heredity or the laws of eugenics—*each species having its own caracteristic cromosomes of its specific number.*

Different parts of the body possess different "polarities" or, as some express it, different rates and modes of motion. Some parts of the body ar affected more by the negativ pole while others ar affected more by the positiv pole. If a part of the body normally positiv becomes negativly charged, or vice versa, that part is diseasd; *i. e.* possesses an abnormal rate and mode of motion. If it becomes neutral, it also is in a state of fysical unrest.

If there is any way by which we can prove that the body is made up of aggregations of electrical systems or sferes of radioactivity, we shal draw nearer to the etiology of disease as wel as its relief.

It has been proved that certain rays of light cause the body to giv off more or less electrical force. It has likewise been proved that other rays of light cause sedation. From these proven fenomena, it seems as tho the body wer composed of radioactiv segments and controld by them.

Since different parts of the body do giv different rates and modes of motion, it follows that their sferes of radioactivity vary.

Some Effects of Energy

From what has alredy been said, it can be deduced that every fenomenon in nature is a matter of motion. Light, color, sound, electricity, and radioactive energy ar forms of motion, and their rate and mode of motion differentiate them from each other.

The effect of *Light* is seen in all forms of vegetable and animal life. The reflex action by means of the skin and eye effects the change in matter. Pigmentation is simply a reaction and accommodation of protoplasm to the action of light or other motion.

Colors also produce a far-reaching effect upon the development of all forms of life. Scientists hav demonstrated the profound effect of color. It has been shown that bacilli, when exposed to the ultra-violet rays, ar changed into a different species; and the revized or new baccilli, when injected into animals, develop an entirely different disease. It has

also been found that intense rays from the ultra-violet region of the spectrum, when radiated from a quartz mercury-vapor lamp, wil coagulate eg albumen and solutions of serum protein. (I hav often duplicatd these experiments.)

It has been found that the larvae of the common white cabbage butterfly, which is a colorless insect, wil, if placed in boxes of various colors, produce butterflies within three to five generations of the exact shade of the box in which they wer reard. These same metamorfosed butterflies, which might be brown, red, blue, or any other color, can, by the reverse process of rearing them (that is, in a normal light without color) be brot back to their natural white color within three to five generations.

It is wel known that cameleons, salamanders, newts, lizards, and some species of frogs and toads, ar changed in color by reflex irritation thru the eye; and if blinded in one eye do not change color on the corresponding side of the body.

The effect of *Sound* upon the sympathetic system has been wel shown by its influence on insects, birds, fish, animals, and people.

The effects of *other* rates and modes of motion, or energy, hav not been so wel known, but they hav recently been shown in the change of vegetable and animal development, when under certain forms of high frequencies.

We know that the ear responds to sound energy, and the eye to light and color energy. It can be shown that other organs in the body respond to energy produced by light, color, sound, and other rates and modes of motion; and from this we may infer that *every organ in the body responds to every rate and mode of motion.*

For over thirty years I hav been able to prove that the energy from *magnets* would affect animal life. Many disputed my findings because I proved them on animals. One investigator, however, has recently proved this in another way. He reasoned that if one energy differd from another only as its rate and mode of motion differd, then all energy would act on a fotografic plate. After showing that electric currents and high frequencies would manifest themselvs on a sensitiv plate, he took up the work with permanent and temporary magnets. He took a large horseshoe magnet and stood it on the curvd end. On the free ends of the magnet, he placed a fotografic plate such as is used for x-ray work. On the plate he placed all sorts of

substances, mineral and vegetable, coverd all with many thicknesses of light-proof cloth and put it into a dark room. On another table in the same room he placed duplicate things in the same manner, but used a *wooden* horseshoe. This was for a "control." He lockt the dark-room door and did not open it for twenty-one days. He then developt the plate. The plate with the *wooden* horse-shoe support had *nothing* on it. The one with the *horse-shoe magnet* support showd a fotograf of each object on the plate, regardless of what it was. This was scientific proof extraordinary that a constant field of energy envelopt the ends of the magnet. (This report has been publisht in several scientific journals, and corroborates my findings.)

These experiments prove that the energy from a magnet is a rate and mode of motion and so must affect any other rate and mode of motion. It also proves that magnetic energy is similar to light, but of a different rate and mode of motion; as the fotografic plate is made for that peculiar rate and mode of motion cald "light."

It has been found that if a magnet is of the temporary variety, that is, one carrying a live current from battery cels, fotografic plates can be imprinted very much more quickly.

Many of the older ideas regarding magnetism must be greatly modified to conform with these proven findings.

It has also been proved that an electric current passing thru wire conductors wil act upon a fotografic plate.

I hav personally proved that a fotografic plate carried in a light-proof container fastened to my undershirt for several days wil be acted upon by energy from the body.

The Sympathetic-Vagal Reflex

In the body we hav a nervous organism which might be likend to a telefone system, of which the brain is the central offis and the ganglia the substations. This nervous system is the most accurate index of external energy. The internal organs ar controld by the sympathetic and vagal nervs. Any stimulation of the vagus produces what is termd "vagal tone," and with a change in "vagal tone" there is a change in the tension of the viscera. That the tension of the viscera changes under external energy, we can prove by means of various mecanical devices.

It can be proved that the magnetic meridian; energy

from a magnet; human energy; and light, color, and sound waves, wil all produce a change in the tonicity or tension of the viscera. This change in tonicity is what I call the *Sympathetic-Vagal Reflex (VR)*.

This change in tonicity or tension of the viscera can be demonstrated by means of the organotonometer, cardiograf-kymograf, plethysmograf, stethoscope, sfygmomanometer, and by air-colum percussion. The tecnic for demonstrating the sympathetic-vagal reflex has been thoroly workt out and very often demonstrated.

As the sympathetic-vagal tone of the body is changed, so is the tension of the vascular system changed in proportion to the susceptibility of the subject and the energy given off. This can be shown by various tests, but before the tecnic can be explaind, we must briefly consider magnetics as wel as a few other fysical fenomena.

Sympathetic-Vagal Tone and Blood Pressure

Some time ago I sent out over sixty letters to physicians, asking them to make the following observations:

Take the blood pressure, preferably by the auscultatory method, of a helthy normal individual grounded to metal and facing at right angles to the magnetic meridian in a subdued light.

Then remove the cuf from the body and turn the subject so as to face parallel with the magnetic meridian. Then take the blood pressure in exactly the same manner.

Observ if there wer any difference in the findings.

Many of these physicians had never herd of my methods, but from curiosity they followd out the instructions. I hav receivd replies from many of them and, with only one exception, they observd that the blood pressure in an individual facing parallel with the magnetic meridian was different than when he faced at right angles to it. With most individuals the blood pressure wil be higher when they ar facing parallel with the magnetic meridian than when at right angles to it, while with a few it wil be lower. These findings coincide with mine.

For a long time I tried to formulate a reason for the blood pressure being lower in an individual when facing parallel with the magnetic meridian. In 90% of the cases

exhibiting this fenomenon, I hav found what is generally termd a "neurotic hart," that is, it was either intermittent or irregular.

Magnetics

We cannot all be magneticians, but we should know something regarding magnetics when studying biodynamics, either in diagnosis or therapeutics.

Sir William Gilbert in 1600 publisht in his book entitled "De Magnete" his theory regarding magnetism. He considerd the globe of the erth a great magnet with the positiv magnetic pole of the erth for its south geografical pole and its negativ magnetic pole as its north geografical pole.

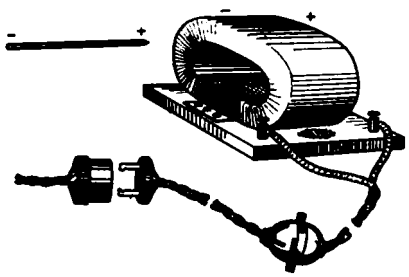


Fig. 21. Valens Solenoid and a small steel bar just taken out of the activ Solenoid. Notis that the polarities of bar and solenoid ar identical.

The law of magnetic action is that like poles repel, while unlike poles attract each other. Therefore the north-seeking pole of a magnetic needle must be the positiv pole, while the south-seeking pole must be the negativ pole.

Among the synonymous terms given in the new Standard Dictionary for the poles of a magnetic needle ar, north pole, north-seeking pole, or positiv pole; south pole, south-seeking pole, or negativ pole.

According to the molecular theory of magnetism, every molecule or elementary part of a bar of iron or steel is naturally a magnet, and to magnetize it we need only to line up more or less perfectly the little elementary magnets.

If a rod of soft, Norway iron is held parallel with a freely moving magnetic needle and gently tapt a few times, it wil hav polarity the same as the magnetic needle; but the

iron being soft, the magnetic retentivity wil be short. If a piece of hard steel is held parallel with the magetic needle, it wil hav to be hit a great many times before it wil show polarity; but once it has become polarized, its magnetic retentivity is very lasting.

The regular way of making a permanent magnet is to take a piece of hardend steel and place it within a *solenoid* (That is, within an air core surrounded by more or less turns of insulated conducting wire, Fig. 21), and pass a galvanic current thru the coil. The end of the bar that is placed toward the positiv end of the core wil be the north-seeking pole, and the opposit end wil be the south-seeking pole. (Fig. 21.)

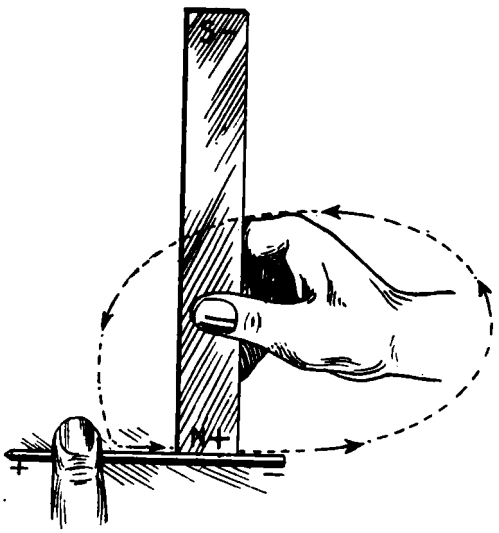


Fig. 22. Showing a large bar magnet being used to magnetize a small steel bar. Notis direction of stroke and polarities of the metals.

Another method of making a magnet is by means of friction. For this purpose a large bar magnet is used. Rub the south or negativ end of a small magnet, in a uniformly outward curvd direction, with the north or positiv pole of the large bar magnet. (Fig. 22)

The north-seeking pole of a bar magnet stroked on the end of another bar wil make the end that is stroked the south-seeking pole. In other words, stroking a piece of steel with a bar magnet, givs to the end of the steel that is

stroked an opposit polarity to that which is used in stroking it. Do not rub a large bar magnet back and forth on the steel bar, but stroke it in one direction, and let that be from about the middle of the bar outward to the end which you ar magnetizing. In this manner the whole bar is magnetized, and if one is particular they can always be sure that the small bar magnet is properly polarized. To *prove* that this bar magnet is correct, *always* test it with the magnetic needle. (Fig. 23.)

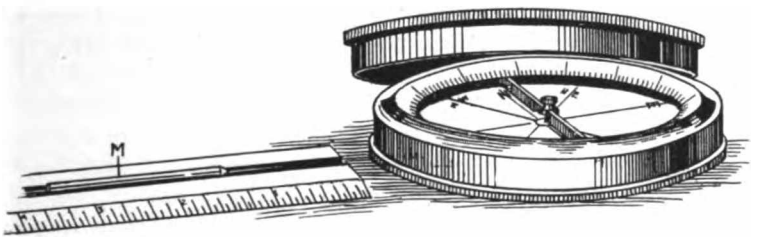


Fig. 23. Showing a standard bar compass and a groovd ruler directed east and west. *M* is a small bar magnet. As the bar *M* is approached toward the compass the needle wil be repeld or attracted. The mesuring rule shows the deflecting power of the magnet.

(*To demagnetize a watch* we put an *alternating* current or a rapid-sinusoidal current thru a solenoid and, while this current is passing thru it, place the watch within the core of the solenoid and draw it out slowly—the current remaining on. This demagnetizes a watch or any metal that is placed in like manner.

Remember that an *alternating current* (*AC*) therapeutically is cald a *rapid-sine-wave current,* so the rapid-sine current from your offis apparatus wil do the same thing, but it may take a little longer.)

As the human organism is so sensitiv to magnetic energy, large magnets should be bonded and kept a long distance from the room in which you diagnose, and preferably on the floor. Small magnets should be kept flat on the floor where this work is done.

As explaind later, colors should be used in place of magnets.

A large bar magnet should never be used for diagnostic purposes. It is used only for magnetizing a small bar magnet if one does not hav a solenoid.

Any magnet for the purpose of diagnosis should be standardized by finding out how near it must approach a compass needle to deflect it. This distance is about the distance it should be from the subject or patient being tested. A magnet causing a deflection of the magnetic needle at about six inches is correct for this work. Always try any magnet to see which is the north-seeking end. Do this by means of a compass needle. This is very important as some bar magnets ar wrongly markt. (See Fig. 23.)

Remember that like poles repel and unlike poles attract each other, so the north-seeking or positiv pole of the bar magnet wil repel the north-seeking pole of the magnetic needle, but wil attract the south-seeking or negativ pole.

The practical way of mesuring magnetic intensity is by means of a magnetometer. The simplest form is a magnetic needle, with a meter mesure, pointing at right angles to the magnetic meridian (Fig. 23). By means of the magnetometer we can mesure the relativ strength of a magnet.

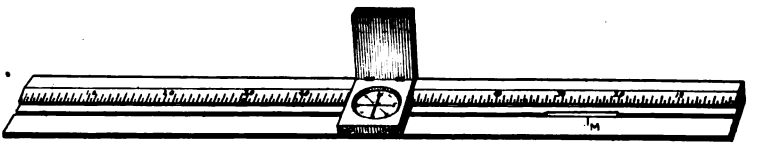


Fig. 24. Showing a Magnetometer of improved type. *M* is a small bar magnet pointing at right angles to the magnetic meridian.

Each magnet is accompanied by its own magnetic field.

Magnetic induction may be defined as the production of magnetism in a body by placing it within a magnetic field.

Another law in magnetics that we should remember is that magnetic lines of force run side by side and do not cross each other.

Altho fysicists hav agreed that magnetism has no effect upon the human body, I can prove, according to the sympathetic-vagal reflex, that it has.

For ages magneto-therapy has been practist empirically, and those who hav practist it hav been considerd as unscientific. Investigators hav found that the living body is influenst by magnetic energy from a magnet. I am now able to prove that a living body is also influenst by the erth's magnetic fields.

I hav made another very singular discovery, and that is that an anemic person does not giv as decided a reaction to magnetic energy as a plethoric individual. Whether this is owing to the fact that there is less iron in the system, I do not know.

Because of the supposed effect of magnetism upon the living organism, various appliances containing magnets hav been made for a person to wear. I hav proved by means of the sympathetic-vagal reflex that this is a wrong procedure, as this reflex wil become dissipated after a certain length of time, no matter what energy is used.

Over-stimulation produces relaxation, and constant stimulation from magnets, or any other source, loses its stimulating effect if too prolongd.

Stimulating energy must be intermittent. Animal instinct seems to demonstrate this fact.

The Magnetic Meridian

Fysicists hav agreed that the lines of force from the north-seeking pole of a bar magnet tend to move along a line of force, leave the north-seeking pole and enter the south-seeking pole, and that these lines ar in a continuous circle thru the body of the magnet as wel as the outside of it.

The *Magnetic Meridian,* according to this theory, is an imaginary line of positiv energy, passing from the south geografical pole over the erth to the north geografical pole, and then thru the erth as negativ energy to the south again; and the lines of energy from a magnetic needle ar passing in the opposit direction.

Effects of the Magnetic Meridian

A compass needle points north and south, and the north-seeking pole is drawn in its definit direction by some unseen energy. I hav made the discovery that this same energy wil also change the tonicity, or tension, of the organs of the body, if a certain tecnic is followd. (The hart and blood vessels ar considerd together as an organ.)

I hav found that some insects and all birds take a definit geografical direction when going home, and birds do not deviate from this direction for miles and miles in flight. When this is done in the dark, it cannot be the eyes that guide them. Their ears ar not sensitiv enuf to show them

the way; their sense of smel is limited. What guides them? I have askt this innumerable times, but hav never receivd a satisfactory answer.

From my observation and experiments I am inclined to believe that it is the magnetic fields of the erth. That is, the magnetic meridian has more or less of an effect upon the sympathetic system of all insects, birds and animals in a similar manner as it has upon the magnetic needle, by which they ar able to orientate themselvs, when all other senses ar out of use. This instinct might wel be cald a "psychic compass."

As before stated, I hav experimented with some individuals who could be blindfolded and turnd about on a pedestal, and they could tel in what direction they wer facing. Some blind people hav this faculty. We might say that it is the "natural instinct," but like so many so-cald "instincts," it has been stunted by modern "civilization." It is wel known that the aborigines had a greater faculty for orientation than their "cultivated" descendants.

(The magnetic needle because of its direction-showing property might properly be cald an *orientometer* or an *orientoscope*.

In like manner, the human body because of the biodynamic effect that the magnetic-meridian energy has upon it might be cald an *orientometer* or an *orientoscope*.)

BIRDS OF PASSAGE

The Biological Survey hav publisht in one of their reports the fact that the golden plover makes the longest, continuous bird flight on record. This little bird nests in the Arctic and at the end of the summer follows the coast south as far as Nova Scotia. There the coast line takes a jog to the west, and the plover puts out boldly to sea and does not stop in many cases until he has reacht the balmy shores of Venezuela. This distance is about twenty-four thousand miles, going and coming, and the flight is made every autumn.*

This report also makes note of the fact that it would take a very good knowledge of the ocean currents and ex-

*In making this tremendous flight, the plover reduces its body weight only about two ounces. The most efficient 1000-pound aeroplane consumes in a twenty-mile flight one gallon of gasoline. Figuring combustion in proportion to weight and distance, the plover consumes only one-eighth as much carbon as the latest model aeroplane.

tremely good steering, with regards to astronomical observations, for a steamship to strike so small a mark at so great a distance, so we may wel marvel at the "instinct" which carries these tiny migrators straight to their goal thru an element more mobil than the sea.

The longest flight, altho not continuous, is that made by the Arctic tern. Twice a year he flies almost from pole to pole, covering an aggregate distance of twenty-two thousand miles. The chimney swift also makes great flights at certain times of the year and, altho the flocks ar innumerable about the northern coast of the Gulf of Mexico, yet they disappear in a night and no one yet knows where their hiding place is during an intervening five months before they re-appear.

Magnetic Meridian and Cattle

That the magnetic meridian has an effect upon animal life other than the sympathetic-vagal reflex, there can be no doubt. Just what that effect is I do not know except from its manifestations. Years ago I was told by a stock raiser that he had notist that cattle standing in a stable so they wer facing in the magnetic meridian did better than those standing at right angles to it. Just why this was he did not know, but said he was going to bild all his stables in the future so the cattle would face in the magnetic meridian, that is north or south.

Magnetic Meridian and Poultry

I hav experimented a good deal with poultry to see what effect the magnetic meridian had on them, and I can report that hens roosting with heds north or south seem to lay more egs than hens roosting east or west. Many others hav made the same observations. The roosts should run east and west and then the hens hav to face north or south. The roosts should be connected with the ground.

Magnetic Meridian and Human Organism

For many years I hav at various times demonstrated to different people (some of them professional men) some of the effects of the magnetic meridian upon the human organism. I hav often empirically advized anemic persons to sleep parallel with the magnetic meridian. In the ma-

jority of instances the people wer benefitted by the change. Whether this wer all psychic or not, I did not know. Later I began changing the cribs of infants that wer not doing wel so that they lay parallel with the magnetic meridian. Almost invariably the infants hav done better with the change, so that could not hav been psychic.

Unquestionably the magnetic meridian has a far-reaching effect upon life; and that it has a different effect upon a wel individual than upon one that is not, we ar able to demonstrate in very many ways. When one considers that life is a manifestation of "vital force" and vital force is a rate and mode of motion, then one can redily understand why the magnetic meridian, which is in itself a rate and mode of motion, must hav a different effect upon one with a normal rate and mode of motion than it would hav upon one with an abnormal rate and mode of motion.

We ar born and evolvd under the influence of gravitation, atmosferic pressure, and the magnetic fields of the erth. Why should one say one force influences animal life and that another force does not? Of course *all* fysical fenomena influence animal life—vital force. *Every rate and mode of motion affects every other rate and mode of motion.*

Theoretical Explanation of the MM VR

I am often askt by scientists and pnysicians for an explanation as to why the magnetic meridian affects the body more when it is facing north or south than when it is facing east or west. The following fysical facts may help to anser this question:

Energy is known only by its manifestations.

The *magnetic meridian energy* must be a rate and mode of motion or it would not affect the magnetic needle.

The *magnetic needle* givs off a rate and mode of motion.

Every rate and mode of motion affects every other rate and mode of motion.

All *nervous energy* is a rate and mode of motion.

A *nervous stimulus* or excitation is a temporary change in nervous energy.

A reflex is an involuntary movement caracterized by a temporary change in a rate and mode of motion without the necessary intervention of consciousness.

In stepping up magnetism into electrical energy, the electrical potential is increast in direct proportion to the lines of magnetism that ar cut. (Figs. 25 and 26.)

The *sympathetic ganglia* ar placed in the posterior part of the torso anterior to the spinal colum. The ramifications from the sympathetic ganglia ar lateral. Therefore they present a great deal more surface antero-posteriorly than they do laterally. A glance at a drawing of the great nerv ganglia wil make this clear. (Fig 25.)

When the body is facing east or west the magnetic meridian cuts relativly only a very few lines of force from the great nerv ganglia and their axons; but when the body is facing in the magnetic meridian, that is, north or south, the energy from the magnetic meridian cuts infinitly more lines of force and in so doing steps up the energy, thus producing a reflex. (Figs. 25 and 26.)

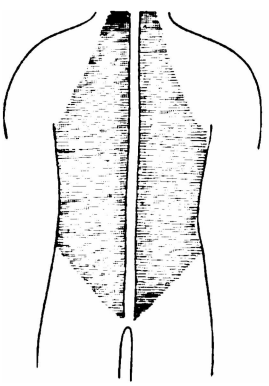


Fig. 25. Representing the lateral ramifications of the sympathetic ganglia. Compare this with Fig. 26. Fig. 25 represents the lines cut when body faces north or south.

Fig. 26. Representing ends of nervs acted on by MM as body faces east or west. Compare this with Fig. 25.

This explanation seems very consistent when we consider the fact that *all forms of energy ar related* and it is easy to step one energy up or down into another form. For example, mecanical motion is stept up into electricity; electricity is stept down into heat; heat is stept up into light which, when applied to the growing plant, is stept up into the vital manifestation of growth, nutrition and reproduction.

Grafic Explanation of the MM VR

Fig. 27 represents a chromatic screen made to grafically delineate the theoretical explanation of the sympathetic-vagal reflex induced by the energy of the magnetic meridian (MM VR).

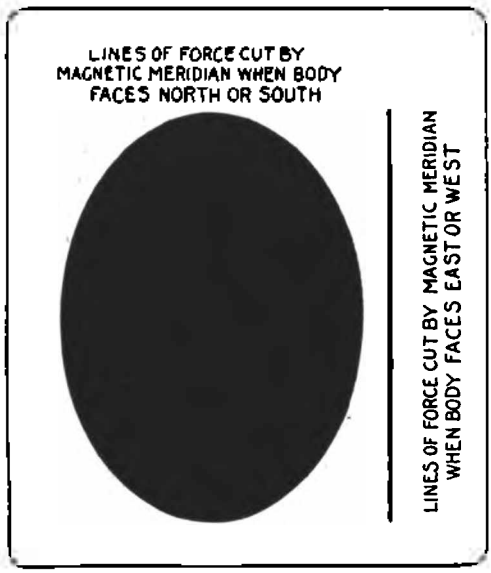


Fig. 27. Reproductions of one of my screens made to illustrate the effect of the MM on the body as it faces from east or west to north or south. Notis the great increase of energy as body turns from facing east or west to face north or south.

The narrow line at the right of this Fig. represents a side view of the sympathetic nervous system. That is the resistance that the energy flowing from the south geografical pole of the erth to the north geografical pole of the erth (magnetic meridian) would meet in the human ganglionic system as a person stood facing east or west.

The oval represents the resistance that this same magnetic-meridian energy would meet in the human ganglionic system as a person stood facing north or south. (See also Fig. 25.)

This can be compared to a sheet of paper held to the wind. When the side is to the wind it pushes the paper, but when the edge is to the wind practically no push is given to the paper.

As is wel known, the living nervs ar nothing more nor less than charged conductors of electricity or energy. It can therefore redily be understood from this grafic representation that infinitly more lines of force ar cut by the magnetic meridian energy when the body is facing north or south (Fig. 25) than when it is facing east or west. (Fig. 26.)

It is the sudden change from east or west to north or south that elicits the magnetic-meridian-sympathetic-vagal reflex (MM VR). That this as a reflex pure and simple, can be demonstrated by the fact that if the body faces north or south for from five to ten minutes the nervous stimulation becomes exhausted and the stimulation subsides.

(It is on the same principle that is shown when one enters a room that is very much hotter than the body temperature. The skin immediately contracts, but after it has become accustomd to the heat it relaxes, the pores open, and perspiration begins.)

Polarity

The north-seeking pole of a bar magnet givs off positiv energy while the south-seeking pole givs off negativ energy.

(NiP=North is Positiv. SiN=South is Negativ.)

Every form of energy seems to possess polarity. For example, non-actinic light appears to hav an effect upon the body similar to negativ electricity, while actinic light seems to exert an influence like positiv electricity.

To ascertain the polarity of any energy or substance, one can use a small bar magnet (Fig. 22). If the energy we ar differentiating is positiv energy, it wil be neutralized by the negativ or south-seeking pole of the bar magnet. If it is negativ energy, the negativ pole wil augment the energy or leave it unchanged. (Opposit poles neutralize each other while like poles do not.) If the energy is neutral, both poles of the bar magnet wil dissipate it.

By ascertaining the polarity of the energy coming from a painful site, we can tel whether pus is present or not. Appendicular disease, an ulcerated tooth, or pus in the different sinuses of the hed, can be quickly and accurately diagnosed by this method. A painful area without pus givs a different form of energy than that containing pus.

Polarity of Metals

In working with an extremely sensitiv d'Arsonval galvanometer, I hav found that brass, copper, iron, and nearly

all other metals, when influenst by human energy, turn the indicating mirror in the same direction as glass rubd with silk, which is considerd to be electrically positiv. I also made the discovery that aluminum in contact with, or in close proximity to the body, deflects the mirror in an opposit direction the same as ebonite rubd with cat's fur, which is considerd to be electrically negativ.

In working with different metals, I also found that nickel, whether solid or plated on some non-magnetic material, exerts an influence over the magnetoscope (Fig. 24), sometimes attracting the north and south-seeking poles and at other times repelling them. It wil also at times repel one pole and attract the other. In other words, nickel is an unstable, para-magnetic metal.

These facts emfasize the importance of being exact in this new line of work. I spent a long time in working out data with nickel-plated energy terminals, only to find that the work had to be all done over because of the instability of the findings with nickel.

The very fact that the sensitiv galvanometer is deflected by copper or brass in an opposit way than by aluminum, shows how important it is that we should use only one kind of metal for energy-conductor terminals in all this work. For many reasons I hav found that aluminum is the best.

Polarity of the Erth—
Simple Method of Proving

As has alredy been stated, the polarity of the north geografical pole is negativ and the polarity of the south geografical pole is positiv.

Some years ago, while I was giving some demonstrations in fysics, a scientist askt me if there wer any simple method of *proving* this fysical fact. I told him I thot there was and askt for a galvanic battery and a solenoid, and proceded to giv the following demonstration:

Fig. 28, represents a glass of water with the two terminals of a galvanic cel dipping into it. From one of these terminals twice as many bubbles of gas ar escaping as ar escaping from the other terminal.

It is wel known that the composition of water is H_2O, that is, two molecules of hydrogen to one of oxygen. Therefore the terminal that has the greater number of bubbles

coming from it must be the negativ pole, and the other the positiv pole.

I markt these terminals and placed them in a solenoid similar to the one shown in Fig. 21.

I then placed a needle within this solenoid while the galvanic current was passing thru it. The end of the needle that was toward the negativ end of the solenoid coil must be negativ and the end toward the positiv side must be the positiv. This anyone can prove to their own satisfaction. (Fig. 21.)

When the positiv end of this magnetized needle was pointed at right angles to the north-seeking pole of the magnetic needle, that pole was repeld. That proved conclusivly that the *north-seeking* pole of the magnetic needle was positiv and, therefore the other end must be negativ.

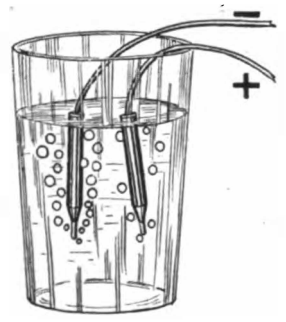


Fig. 28. Showing position of negativ poles of battery in glass of water. Notis the large number of bubbles coming from the negativ pole. This proves that pole is negativ, as H_2 of the H_2O flows off the negativ terminal.

Un Like poles attract and unlike poles repel each other. Consequently the pole of the *erth* toward which the positiv or north-seeking end of the magnetic needle pointed must be negativ. Hence, it was proved in a very simple laboratory manner that the north geografical pole of the *erth* must be negativ and the south geografical pole be positiv.

Colors as a Means of Differentiating Polarity and Rates and Modes of Motion

In analyzing vital force, the term polarity is too indefinit. We understand the positiv pole, or extremity, has one rate and mode of motion; and the negativ pole, or ex-

tremity, has another rate and mode of motion. Between these two poles or extremities in vital force there must be an endless diversity in rates and modes of motion. The galvanometer wil differentiate only the *polar* difference between rates and modes of motion in vital force; but in *colors* we hav a means of differentiating rates and modes of motion in a manner that is more subtle than any known instrument. This is done by utilizing the fysical law known as *interference of motion* or energy, radiant colors interfering with or neutralizing any energy acting upon vital force.

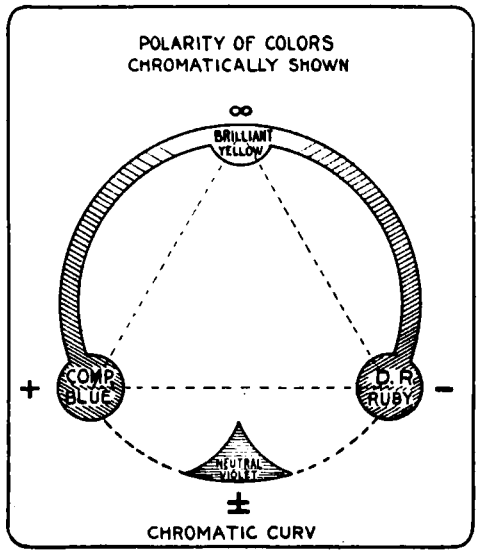


Fig. 29. Chromatic Curv. Polarity of colors Chromatically shown. Complementary blue is a positiv color while dark-room ruby is a negativ color. The combination of the two givs neutral violet which is both positiv and negativ. Brilliant yellow is at the apex of the triangle and tends toward infinity.

As one wave wil neutralize another wave of equal force and magnitude, so wil the rate and mode of motion from a radiant color neutralize any other rate and mode of motion of the same caracter and size.

While this discussion may appear hypothetical, yet the facts hav all been proved by actual experimentation with the most sensitiv instruments. For instance, energy that is neutralized by the negativ pole is also neutralized by the dark-

room ruby light; and the energy that is neutralized by the positiv pole is also neutralized by the blue light that is complementary to dark-room ruby ("Cyan Blue"). The combination of these two radiant colors produces a shade of purple which wil neutralize energy that is neutralized by both the positiv and negativ poles. (Fig. 29.)

Let us examin the fysiological caracteristics of the two poles.

Negativ electricity to the body is irritating and excitativ. Red light is also irritating and excitativ.

Positiv electricity is sedativ. Blue light is also sedativ.

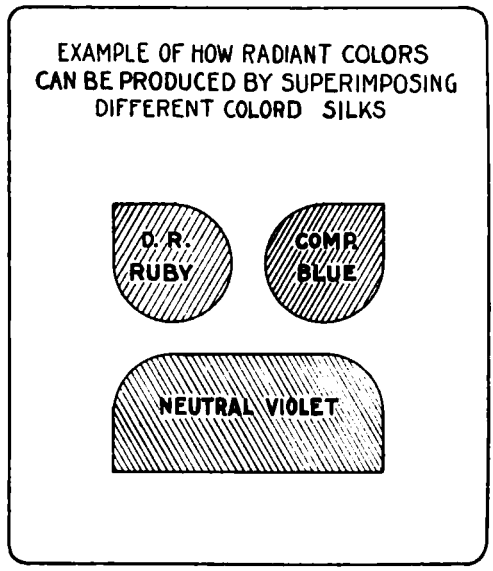


Fig. 30. Representing one of my Chromatic Screens. The upper two openings hav fabric in each to radiate dark-room ruby and complementary blue respectivly. The lower large window has the two fabrics, one over the other, and the light radiated thru it is neutral violet.

The ruby at its end of the spectrum has its particular rate and mode of motion; and the blue at its end of the spectrum has its particular rate and mode of motion. Between these two colors there ar limitless rates and modes of motion. Every shade or tint or combination of colors, represents a rate and mode of motion, each differing from the other. (Figs. 29, 30, 31.)

This wil giv some idea of how much more fine and accurate the differentiation of energy by means of colors is than by the most sensitiv magnetic needle.

I now employ radiant colors insted of magnets for diagnosing disease or for studying "polarities"—rates and modes of motion. They ar infinitly more accurate, if one has standardized colors.

"Polarity" vs. Rate and Mode of Motion

I formerly used the word "polarity" in discussing the diagnosis of disease by means of polar energy because it seemed as tho there wer no better nomenclature. However, little by little, I am getting away from using the word "polarity" and am using in its sted the term *"rate and mode of motion."*

From what has alredy been said under the hed of Polarity and under the hed of Colors as a means of differentiating polarity and rates and modes of motion it can be redily understood that the term "polarity" is altogether too narrow for Bio-Dynamo-Chromatic work.

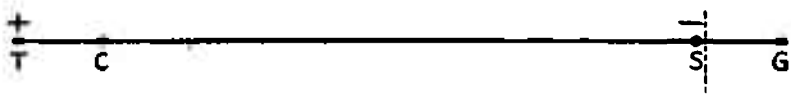


Fig. 31. Grafically showing how "Polarity," as understood in fysics, is not applicable to Vital Force, as there ar limitless rates and modes of motion between the poles. These rates and modes of motion can be differentiated by means of radiant colors, but not by a galvanometer or a bar magnet.

To illustrate how the term "polarity" is misleading and not at all broad enuf for B-D-C work, I hav grafically shown in Figs. 29 and 31 how different rates and modes of motion may be *toward* the opposit pole but stil hav an entirely different rate and mode of motion, as proved by the fact that one radiant energy would neutralize one condition and not the other.

As explaind under the hed of Interference of Sound or Energy, the radiation of dark-room ruby would interfere with a certain rate and mode of motion which would not be affected by, for example, blue. This same analogy applies to all colors.

Fig. 31, grafically shows how "polarity" as it is understood in fysics is not applicable to vital force.

As illustrated in Fig. 29, there ar limitless rates and modes of motion between the poles. The rates and modes of motion can be differentiated by means of radiant colors but not by galvanometers or magnets.

Referring to the letters in Fig. 31, *T* and *C* stand respectivly for tuberculosis and carcinoma, and they ar at the plus end of the line. *S* and *G* stand for syfilis and gonorrhea and they ar at the minus end of the line. The energy from tuberculosis and carcinoma ar both dissipated by negativ energy while the energy from syfilis and gonorrhea ar both neutralized by positiv energy. See, therefore, how much farther one is able to go by using the terms, *"rate and mode of motion."*

T grafically represents the rate and mode of motion of tuberculosis. That rate and mode of motion is dissipated by the rate and mode of motion of dark-room-ruby-radiant energy. (A-Chromatic Screen.)

C grafically represents the rate and mode of motion of carcinoma, and this energy is dissipated by the rate and mode of motion of radiant energy represented by "non-actinic orange." (B-Chromatic Screen.)

This "cancer color," however, wil not dissipate the energy from tuberculosis.

S grafically shows the rate and mode of motion of syfilis and that energy is dissipated by the radiant energy from a certain blue radiation which is complementary to the dark-room ruby—"cyan blue." (C-Chromatic Screen.)

G grafically represents the rate and mode of motion for gonorrheal infection, and that energy is dissipated by the rate and mode of motion from a color represented by a combination of dark room ruby and cyan blue—"purple." (D-Chromatic Screen.)

The dotted line at *S* grafically represents the minus or negativ pole of the magnet, while *T* represents the plus, or positiv end of the magnet. Now, if this line wer turnd into a circle (Fig. 32), *G* would come between the positiv and the negativ end, as grafically shown in the small triangle in Fig. 29, and therefore would contain the energies of both the positiv and negativ poles. (Fig. 31, shows Fig. 30, in another form and shows how Fig. 29 is bilt up.)

This is actually proved by the fact that the energy from a gonorrheal lesion is dissipated by both the negativ and positiv ends of the magnet—"neutral" energy, or as some might say "iso-polar," but both terms ar tecnically wrong.

Insted of the term "polarity" in Bio-Dynamo-Chromatic work, use the terms "a rate and mode of motion dissipated by"—such and such a color or combination of colors. This wil be more fully discust as we procede.

This dissipation of energy can also be understood when one considers how sound, which is a rate and mode of motion, can be interfered with by another rate and mode of motion thus producing silence. This wil be fully explaind later on.

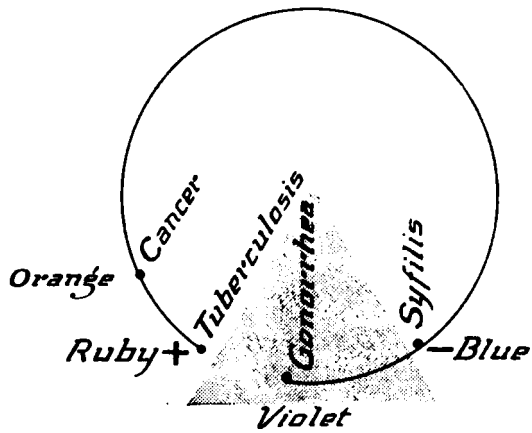


Fig. 32. Showing the Fig. 31 line curvd to illustrate in a practical manner the fysics underlying my Chromatic Curv, shown in Fig. 29. Notis how beautifully the B-D-C system works out and how wonderfully colors exemplify polarities, only infinitly more accurately.

The Chromatic Curv

Fig. 29 illustrates what I hav termd the Chromatic Curv and represents a radiant screen that I hav for showing this.

The curv is a part of a circle which is emblematical of endlessness. The dotted triangle is here emblematical of progression from the base upward to the apex.

It wil be observd that at the left the complementary blue begins, and that is the plus or positiv color. At the right, the dark-room-ruby begins, and that is the minus or negativ color.

The radiations from these two terminals, plus and minus, make the "neutral violet" which is neither positiv nor negativ, but a combination of both. Therefore I hav placed that emblematically lower down in the scale than either the blue or the ruby.

From the "comp. blue" (complimentary blue or cyan blue) upward, we pass thru greenish cyan blue, turquoise, bluish green, sap green, yellow green, and lemon yellow until we reach the brilliant yellow at the apex of the triangle.

From the brilliant yellow we go down the scale thru orange yellow, orange, orange red, etc.

In this Fig. I do not pay much attention to crimson, magenta, purple magenta, purple, purple violet, or blue violet because they ar chromatically speaking below the base line of the triangle and therefore belong in the space near by where "neutral violet" is placed.

There ar many more shades of red and yellow that ar ordinarily depicted. Therefore the space between the comp. blue and the brilliant yellow is about the same as between the brilliant yellow and the dark-room ruby.

Brilliant yellow is at the apex of the triangle opposit the neutral violet. It is also at the highest part of the chromatic curv, equidistant from the complementary blue and the dark-room ruby.

This brilliant yellow is grafically represented by the sign of infinity.

I am aware that this scheme of colors is antagonistic to many others, but it carries out the fundamental principle of the *polarity of colors,* and from my reserch work, I believe it is correct.

Under the hed of Chromatic Therapy more is said regarding color.

Interference of Energy
Interference of Sound

If one wil take a tuning fork, set it in vibration, hold it to the ear, and slowly turn it about, there wil be an exact point reacht when there wil be no sound. This is the "silent location" or the location where the vibrations from the tuning fork meet each other in a way to cause an interference —no sound. (Interference of energy.)

Fig. 33 shows one of the simple devices used for demonstrating this, and is one of the standard methods used in

tecnical laboratories for demonstrating the interference of sound. (Same principle applies to all energies.)

Altho there ar very many other methods for demonstrating this, the illustration given is sufficient for an explanation.

The following is a description of the device and how it works. *J* represents the receiving end in front of which a tuning fork having 528 vibrations a second (C′) is vibrated. *H* is a rubber tube that connects the receiving funnel and the glass tube *G* together. *F* is a small piece of tubing connecting *G* and *B* together at one end. *CDE* is a piece of the same size rubber tubing 33 centimenters long. *A* is a Y-piece for attaching a binaural ear-piece such as is used in a stethoscope. As the vibrations pass thru the tuning fork from tube *HGFB*, they ar interfered with by similar vibrations passing thru the tube *CDE*. As the length of this tube

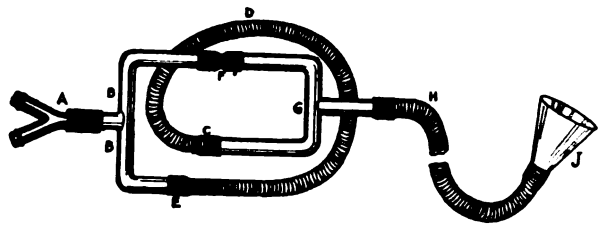


Fig. 33. Showing a device for demonstrating the interference of sound waves.

is in proportion to the vibrations of the tuning fork, the sounds reach *A* in completely opposit fases. Therefore they wil neutralize each other and no sound wil be herd. If we close the rubber tube, *CDE*, by pinching it up with the fingers, the note is immediately herd. This proves that it is the interference of sound that produces the silence.

For this experiment the length of the tube, *CDE*, must be exact (half the wave-length of the note produced by the fork) so as to hav the sound reach the ear in opposit fases. The rule is that "if two waves of sound of the same length procede in the same direction and coincide in their fases, they strengthen each other. If, however, their fases differ by half a wave length, and the amplitudes of vibrations ar the same, they neutralize each other, and silence is the result."

Another method of showing interference of sound energy is by means of Quincke's Acoustic Tubes (Fig. 184). These can be made in such a manner that the sound of one wil silence the sound of the other.

CONCLUSIONS

1. Nature seems to be only another name for a "storehouse of fysical fenomena."

2. Fysical fenomena appear to be rates and modes of motion.

3. The origin of life appears to be only the polarization of energy.

4. Cellular development appears to be a fenomenon of polarity.

5. As all natural fenomena appear to be but modifications of motion, it follows that the different development of tissues or species is only a modification of rates and modes of motion.

6. Energy appears to be the manifestation of some rate and mode of motion.

7. All emotions appear to be rates and modes of motion temporarily changing the individual's *normal* rate and mode of motion.

8. In the animal kingdom at least, a change in the natural rate and mode of motion is accomplisht thru the sympathetic and vagal systems.

9. The sympathetic and vagal systems ar intimately related with the vascular system and thru it with every cel in the body.

10. Disease or unrest of tissue seems to be a manifestation of an abnormal rate and mode of motion.

11. Each rate and mode of motion acts upon or changes any other rate and mode of motion. Consequently each individual influences every other individual to a greater or less extent.

12. The magnetic meridian is a definit rate and mode of motion and must consequently influence all other rates and modes of motion, be they animate or inanimate.

13. All energy to be stimulating must be intermittent.

14. Energy of any kind, if unvaried and constant, acts as an irritant upon the sympathetic system.

15. If any abnormal energy emanating from the body is changed to normal, even temporarily, the individual is benefited.

16. An individual can do more and better work by occasionally changing his position with regard to the magnetic meridian.

17. The cosmic effect of all the rates and modes of motion in the body ar manifested at the surface of the body in what might be cald a "human atmosfere," "magnetic atmosfere," or "aura." This magnetic human atmosfere, or surface emanation, is transmissible from one person to another thru the air, and under certain conditions, can be transmitted thru conductors from one person to another.

18. All true remedial agencies must hav for their ultimate aim the normalizing of an abnormal rate and mode of motion.

19. All repair must be made thru the vascular system.

20. The vascular system is influenst thru the sympathetic and vagal systems.

21. Any agency that acts best on the sympathetic and vagal systems most promptly stabilizes metabolism, augments nutrition, and produces a normal rate and mode of motion.

22. When progress in any form of life ceases, there is a slowing up of life's forces (senility) and consequently the beginning of deth.

23. Deth appears to be the cessation of one form of motion and the beginning of another. In other words, it seems to be a metamorfosis of motion—vital force is liberated and changed into another and higher form of motion.

Judging then by all analogies, deth must be but a transition to superior life and man himself a link in this wonderful chain of upward progression. Is it not an inspiring thot then that all energy (light, color, sound, or other energy—all harmonies of the outward universe) forever exemplifies and teaches this great principle of cosmic influence?

TRANSLATING THE SYMPATHETIC-VAGAL REFLEX.

ALL ENERGY IS RELATED

1. When we ar dealing with human magnetic energy, or atmosfere, aura, vital force, or whatever one elects to call it, we ar dealing with a rate and mode of motion.

2. When we ar dealing with the magnetic-meridian energy, we ar dealing with a rate and mode of motion.

3. When we ar dealing with magnetic energy, we ar dealing with a rate and mode of motion.

4. When we are dealing with static electricity, or any other form of electricity, we ar dealing with a rate and mode of motion.

5. When we ar dealing with radiant light, we ar dealing with a rate and mode of motion.

6. When we ar dealing with radiant colors, we ar dealing with a rate and mode of motion; and each color has its own particular rate and mode of motion.

7. When we ar dealing with sound vibrations, we ar dealing with a rate and mode of motion.

All forms of energy ar related, so all rates and modes of motion ar related—it matters not what they ar nor how they ar generated.

Each form of energy has its own peculiar caracteristic and has to be delt with accordingly.

As all energy is known only by its manifestations, it is evident that it is only by studying each energy as an entity and then in relation with some other energy, that we can know its peculiarities.

Bio-Dynamo-Chromatic (*B-D-C*) *Diagnosis* and *Therapy* utilize vital-force energy in connection with some other energy—principally the Magnetic-Meridian energy. It is for that reason we ar interested now in the laws governing Bio-Dynamo-Chromatics and the tecnic necessary to interpret the Sympathetic-Vagal Reflex. (VR)

Air Colum Percussion

Air-Colum Percussion utilizes the laws of air-colum vibration.

I discoverd this form of percussion in studying air-colum vibration. I named it 'Air-Colum Percussion," because it is percussion thru a colum of air. (The old style manner of percussion is to *press* the pleximeter finger on the skin.)

In air-colum percussion, the pleximeter need not touch the skin at all. In order that the operator may gage his distance from the skin, I recommend the use of French chalk or talcum powder on the part being percust. With this powder on the skin, glide the pleximeter finger over it without any friction, but so as to just feel the lanugo hairs.

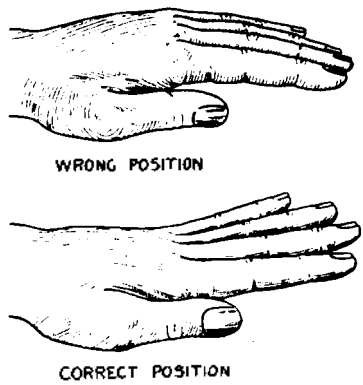


Fig. 34. Showing the wrong position and the correct position of pleximeter fingers for Air-Colum Percussion.

Hyper-extend the fingers of the pleximeter hand, as shown in Fig. 34. Keep the fingers spred widely apart. The reason for this is the same as for keeping two vibrating strings apart so they wil not touch each other—the note would not be clear.

By firmly hyper-extending the fingers, the pleximeter finger vibrates better and any change in tension over the body can be more easily detected. Besides this, by having the finger curv backward a little the colum of air between the end of the finger and the body being percust is longer and givs a clearer note than it would if the finger did not bend backward as illustrated.

Fig. 35 shows how the 1st and 3rd fingers can rest on the body or substance being percust, while the pleximeter finger is elevated and held rigidly in that free position. In this manner the length of the air colum is constant and great delicacy in differentiation can be cultivated.

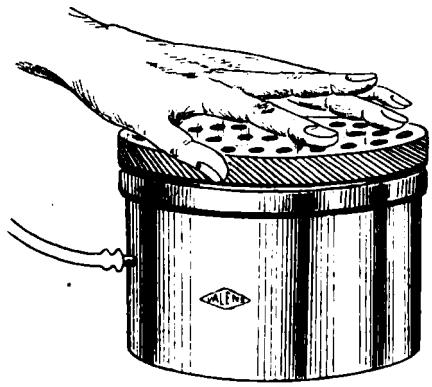


Fig. 35. Showing one special method of using air-colum percussion. Notis that the 1st and 3d fingers ar used as a support for the pleximeter hand, so the pleximeter finger—the 2d one—can be rigidly held hyper-extended in an exact position. If one practises this method, they wil be astounded at the wonderful differentiation of tension that can be made. This method of air-colum percussion can be used over the body or over any substance in practising tecnic and cultivating the ear.

Fig. 36 Fig. 37 Fig. 38 Fig. 39

Showing the evolution of the air-colum percussion plexor thimble. *A* shows a notch cut in upper side of thimble, so the wearer wil always put it on in the exact position.

The Plexor Thimble

In air-colum percussion I use the index finger of the right hand. This is because one has more control of the index finger than of any other finger. On the end of this plexor finger I use a *loaded celluloid thimble.*

Fig. 36 shows this thimble with its end smoothd off so that it wil not hurt the pleximeter finger.

Fig. 37 shows the thimble partly fild with melted bees-wax.

Fig. 38 shows the thimble fild with bird-seed shot or "dust shot" and wax.

Notis that the shot is pourd in *after* the hot wax has been pourd in. The reason is that each shot is then coated with wax and all ar cemented together without having any air spaces between them.

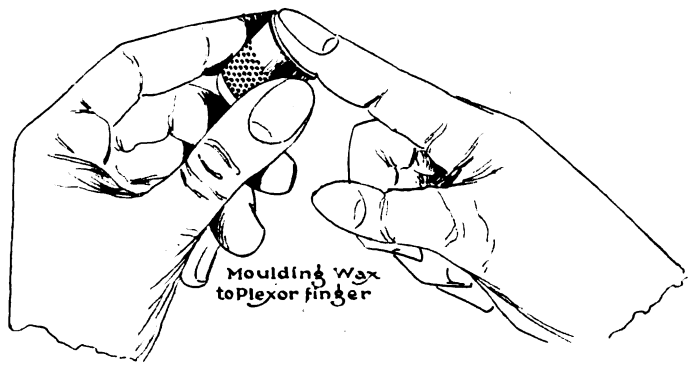


Fig. 40. This shows how to put the thimble on while the wax is stil warm. Fig. 39 shows how such a thimble looks when removed from the fitting finger.

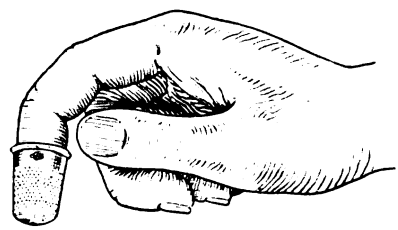


Fig. 41. The Plexor Thimble on Plexor finger. This loaded, celluloid thimble is used in Air-Colum Percussion.

Fig. 39 shows the loaded thimble after it has been moulded to the plexor finger. To do this moulding, put the plexor finger into the thimble after it is fild with shot and is cool enuf to allow the finger to go in without blistering it.

Fig. 40 shows how the finger is placed in. Notis that the ungual surface of the finger is prest up against the thimble so as to squeeze out surplus wax and shot. Mark the side of the thimble that the finger nail comes next to so

you wil always put it on in the same manner. *This is very important.* (See A, Fig. 39.)

Follow the directions explicitly and the thimble wil be correct for air-colum percussion.

Fig. 41 shows how the thimble is used on the plexor finger.

Fig. 42 shows how to practis air-colum percussion on a practis drum.

Practis, practis, practis. Percuss over boards, shingles, paper, walls, doors—in fact over everything.

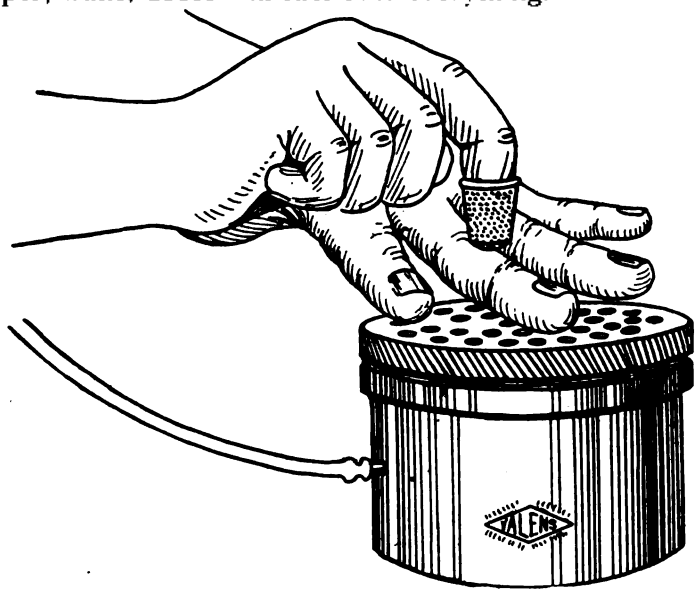


Fig. 42. Showing the use of Valens Practis Drum in cultivating Air-Colum Percussion tecnic. Notis how the fingers of pleximeter hand ar hyper-extended and far apart. The other end of the rubber tube is held in operator's mouth and tension of drum-hed changed at wil.

Percussing in this manner on glasses partly fild with water, as shown in Fig. 43 is good practis. The tone differs with the amount of water in the glass. The fuller the glass the higher the pitch.

Thick wood sounds different than thin wood. Hard wood sounds different than soft wood.

Keep the pleximeter finger a quarter inch away from the substance you practis over and gradually increase the distance, and see how far you can hav it and stil notis a change of note.

Altho I hav experimented with every device and substance I could find or make, nothing wil giv the delicate differentiation of tension that the loaded thimble wil—following out the tecnic as above outlined.

PRACTIS DRUM

Fig. 19 shows my regular Practis Drum. By changing the tension within this drum, as shown in Figs. 35 and 42, the note changes and great accuracy can be acquired by such practis.

A home-made practis drum can be made from a "tomato can" or "soup can." Hav a nipple soldered into the side and cover the smoothd-off top with some kind of vellum. A suitable top is made from good parchment paper soakt for two weeks in formaldehyde water (teaspoonful to the pint) and one-half that quantity of fenol added. Fasten the

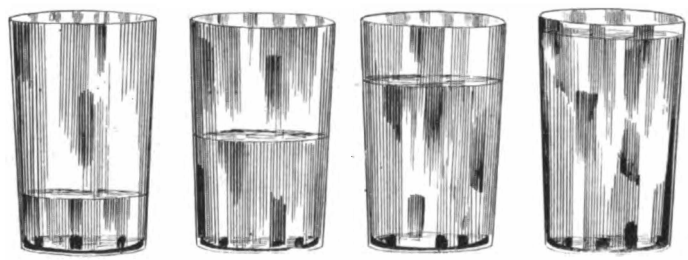


Fig. 43. Glasses partly fild and ful of water. Use such to percuss over and notis the variation of pitch, depending on the amount of water in the glass.

prepared vellum top on with surgeon's plaster and after it is wel dried, paint over with aluminum paint to keep the air out.

Practis til the pleximeter hand can be unconsciously held hyper-extended and until the finger is wel tuffend to the work. Do not try to cover the finger with plaster, rubber, or anything else. It wil soon become hardend and then you wil always be glad that you lernd the air-colum method of percussion in the correct way.

In percussing, hit the pleximeter finger between the middle and distal joints. When one finger becomes too sore to use, use another, and little by little one can become accustomd to using any of the fingers. Some can use the little finger too, but this is not advizable.

How to Percuss on the Abdomen

Fig. 44 shows how to hold the hands over the abdomen in air-colum percussion.

Hold the pleximeter finger horizontal in demonstrating the elicitation of the VR over the abdomen. Fig. 44 makes this plain.

Use a staccato stroke in air-colum percussion. No other stroke can be used and get results.

Strike the pleximeter finger at right angles to it and *do not* giv a slanting blow.

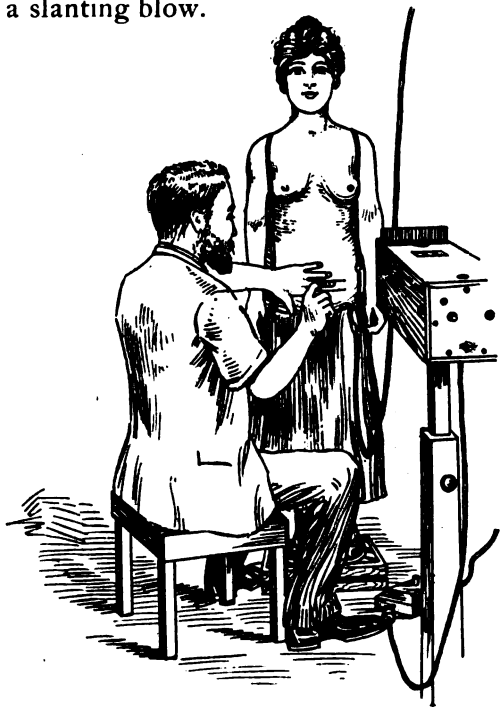


Fig. 44. Showing manner of holding the hand when air-colum percussing over the abdomen. Notis that the hand is horizontal and the fingers of left hand hyper-extended and far apart.

Do not press on the skin. Pressing on the skin in the old style percussion changes the tension of the skin, and any note desired can be thus obtaind.

(Fake percussing has often been practist in this manner. The operator would giv any note he desired by pressing more or less on the skin and by arching the pleximeter finger.)

Mapping out Viscera

By means of air-colum percussion, the organs can be mapt out on a very obese person as wel as on a very thin person. The hart can be mapt out on a very fleshy woman as wel as on a very lean man.

The differentiating note over a large amount of fat is often more pronounst than over "skin and bones." It is all a matter of acoustics—a thump of two stones together under water sounds louder than the same thump in the air. (At first reading, this analogy may not seem apropos, but try air-colum percussion on a very obese woman and judge for yourself.)

A big book can be fild with interesting matter concerning air-colum vibration from all angles, and along with it facts that ar never thot of as relating to acoustics.

Master air-colum percussion and you wil hav at your fingers' ends a means of diagnosing that wil ever delight and please you.

Devices for Air-Colum Percussion

I hav invented many devices to aid in air-colum percussion, and many devices to be used as a substitute for air-colum percussion. They wil all be explaind and illustrated, but before going further, I must explain other tecnic in demonstrating the elicitation of the magnetic-meridian-sympathetic-vagal reflex (MM VR).

Preparing the Room for B-D-C Work

Hav opaque shades at the windows.

Light must not radiate thru colord shades or curtains of any kind.

Cut out all sunlight and moon light.

Do not allow light thru prism glass to enter the room used for B-D-C diagnosis.

Hav the light so subdued in the diagnosing room that you can just see to work, and no more.

For making records as you work, use a shaded light so arranged that the light cannot radiate on the person being examind by the B-D-C method.

Light is energy and the darker the room is, the more effect the magnetic-meridian energy wil hav on the organism.

In using radiant colors, one must realize that the color

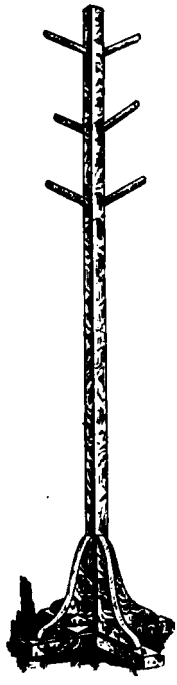
is diluted by white light the same as a water color is diluted by adding water to it.

The walls of the diagnosing room should be of a flat color, preferably dark brown or buf.

Reflected light from a mirror can interfere with the B-D-C work almost as much as direct light.

The room must be quiet. One cannot differentiate sounds in a noisy room.

A diagnosing room in a noisy bilding can be padded or sound dedend in other ways.



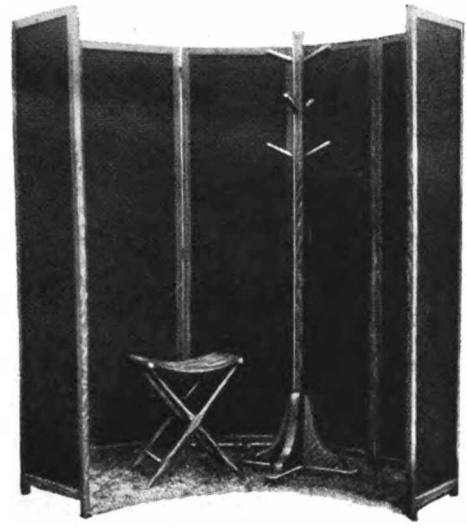


Fig. 45. Showing a "dressing room" made from a six-wing screen. Notis the folding stool and the clothes hanger or tree.

Fig. 46. A costumer or clothes tree. Made of quarterd oak, natural finish.

X-ray or Radium energy makes the energy from the magnetic meridian very unreliable, so one cannot diagnose by the B-D-C method if x-ray or radium energy is used near enuf to the diagnosing room to be detected.

Magnets must not be in the diagnosing room unless lying flat on the floor far away from the patient being examind.

It is better to hav all magnets far away, especially if of any size.

Observ that any magnetic energy that wil deflect the compass needle wil alter the VR.

Look out for your milliampère meters. Work far away from them.

Use your compass to detect magnetic energy.

A "Dressing Room"

It wil not be out of place to speak of the "Dressing Room" under the hed of "Preparing the Room for B-D-C Work," as it is a very necessary adjunct to the diagnosing room. All cannot hav "bilt-in" dressing rooms, but all can have a *six-wing screen* as shown in Fig. 45. This Fig. shows the style of "dressing room" that I use and I hav found it very satisfactory to the patient.

The folding stool and the "costumer" or "clothes tree" ar also shown. The *costumer* is shown in Fig 46. The costumers ar made of quarterd oak to match the rest of my wood work.

This *"dressing room"* is a success and can be moved about or placed anywhere in the room.

The frame for the screen can be of quarterd oak and the burlap panels can be brown. Some outfitting establishments carry six-wing screens in stock, or single wings for putting together.

Each wing should be eighteen inches (18") wide, and sixty-six inches (66") high.

Odors in the B-D-C Room

The odor of ether, chloroform, etc. wil inhibit the elicitation of the MM VR.

The nauseating odor of some drugs wil interfere with the B-D-C work.

Tobacco or cigaret smoke wil often inhibit or alter the B-D-C Findings.

When one realizes that we ar dealing with a reflex governd by the sympathetic, he wil understand how any agency or energy that wil disturb or stimulate the sympathetic system wil alter the findings in Bio-Dynamo-Chromatic diagnosis.

Keep the air in the diagnosing room fresh and pure.

The Aerial Wire

Fig. 47 shows the manner in which I mark off the north and south line, and it is very useful and practical. This wire is the regular, medium size (No. 23) piano wire, and is attacht to a stout hook on one side of the room and to a turnbuckle at the other side of the room.

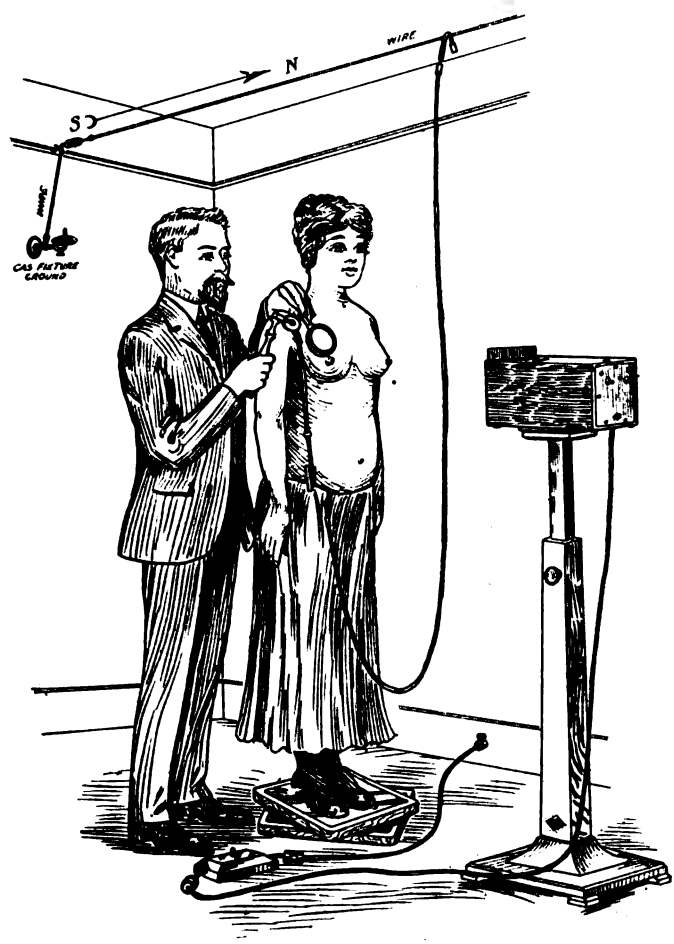


Fig. 47. Showing the manner of placing the aerial wire. Notis that it is made taut by means of a turnbuckle. Notis that the wire runs exactly north and south and is attacht to a grounded pipe. This Fig. also shows how to use the Valens Organotonometer over the chest to demonstrate the elicitation of the MM VR.

The direction of this wire should be accurately mapt out by a magnetic needle. To do this, the needle should be placed on a box one or two feet high so it wil not be influenst by nails or metal girders in the floor. (Never place the magnetic needle on a chair with steel springs in it. It is for that reason that a wooden or paper box is preferable to anything that may hav metal in it.) Draw a cord across the room exactly parallel with this needle. (Fig. 48 shows a special compass made for this work. An ordinary compass wil anser.) Then mark those places on the wall or floor and use a plum line to get the exact position on the upper part of the casing or wall for placing the screw eye,

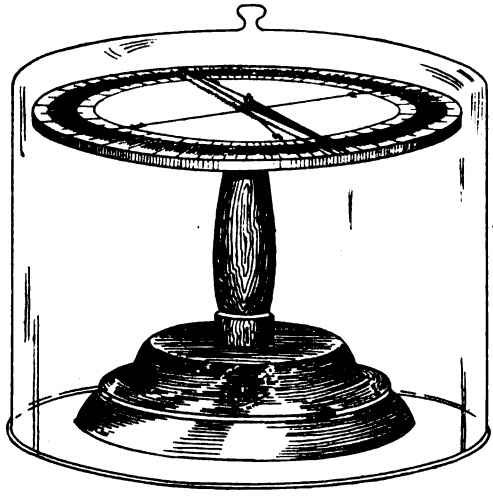


Fig. 48. A very accurate and sensitiv compass.

into which fasten the wire. By means of the turnbuckle, this wire can be made taut.

Hav this aerial-grounding wire as near to the place where you test the patients as possible.

From one end of this aerial-grounding wire, another wire is carried down to a gas jet or water pipe, as shown in Fig. 47.

It is to this aerial grounding wire that the Static Grounders ar to be attacht, as shown in the various figures, showing a grounding wire attacht to the subject.

The grounding wire can run in any direction, but by following out the above plan, the aerial grounding wire is

a *direction marker* for the B-D-C room. (Some paint or otherwise mark the floor to giv them the exact north and south line.)

Magnetic Energy From Trolly Cars

Several of my pupils hav written me regarding a peculiar reflex fenomenon. They could not explain it, but said if a *loaded* trolly car wer passing their offis, while they wer testing a patient, they could get no differentiation of reflex from the position of the patient.

The solution of this "mystery" is that a loaded trolly car, or one going up hil, givs off energy enuf to deflect a delicate magnetic needle when several hundred feet distant. If the trolly car is "coasting" down hil, it givs off no deflecting energy.

Such energy wil elicit the sympathetic-vagal reflex in any person. It is *magnetic energy*.

These findings show that anyone making these tests in an offis in front of which trollys pass, should not attempt to make the test when the car is passing, especially if the car is loaded, or under "strain" as in going up hil.

To make sure regarding this, it is wel for any physician, whose offis is situated where cars pass, to place a very delicate compass upon a wooden table about three feet high, and wel away from all iron work, and see whether the needle is deflected while trolly cars ar passing.

A room three or four stories abov the car tracks does not seem to be affected in this manner.

Preparing the Patient for Examination

For my Bio-Dynamo-Chromatic method of diagnosis I hav found that having the radiant colord light shine on the face is not sufficient, consequently, when eliciting these reflexes, I make it a rule to hav the chest and abdomen of all patients bare.

When doing this work, hav all spectral colors removed. I hav found it best to hav everything removed except a white or a dark skirt. The shoes and stockings need not be removed if they ar not of a spectral color. Hose supporters of a fancy color or garters that constrict the lim should be removed. (Hav the light in the room very much subdued.)

The light from a paraffin or tallow candle is best of all. Next best is that from an oil lamp, or small frosted electric light bulb.)

Skirt Supporters

Fig. 49 shows a very simple, cheap, and effectual skirt supporter. It is made with spring clothespins and a piece of tape or cord. A hole is bored thru one side of the clothespin and the tape or cord fastend in it. Any kind of hose supporter can be used, but this device is more easily and quickly manipulated. The suspender can be made shorter or longer by means of a loop or a metal slide.

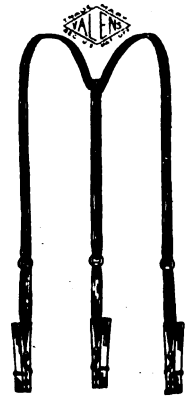


Fig. 49. Simple, home-made, skirt supporter to be used in examination. Wooden-spring clothes pins and tape and slide buckles.

When such a skirt supporter is used, the skirt can be perfectly loose all about the body and not interfere with the work.

Tight bands about the body during diagnosis make the work unreliable.

Grounding the Individual for B-D-C Work

In eliciting the sympathetic-vagal reflex by means of the magnetic meridian, it is very important that the person is in static equilibrium or, in other words, is grounded.

If energy other than the magnetic meridian is employd, it is not so essential that the person be grounded; but to

achieve uniform results in all this work, it is best that the person be *always* grounded while eliciting the sympathetic-vagal reflex.

We ar all familiar with the fenomenon experienst, especially in a cold, dry climate, when we walk across a carpet and put our finger in contact with metal. We know that there is a static discharge. No static discharge could emanate from a person if they wer in static equilibrium.

If a person is not in static equilibrium, he is under a certain surface tension, and this tension interferes with the magnetic-meridian-sympathetic-vagal reflex. It is for that

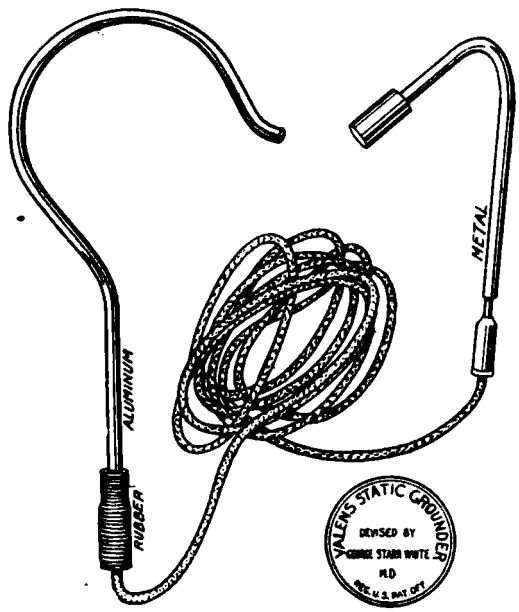


Fig. 50. Showing Valens Static Grounder. The hevy weight on metal hook prevents it from falling off a gas pipe, wire, or anything it is placed on.

reason that the person being tested must be grounded. If the person being tested is standing on the bare ground with bare feet, or if the test is made in very damp wether at a place of low level, the person wil generally be in static equilibrium; but to be uniform in this work, one must be exact in their tecnic and therefore I specify that the person

should *always* be grounded to metal, preferably aluminum, while the tests ar being made.

It matters not what the conductor to the ground is. It can be a wire or a metal chain attacht to a water-pipe, gas pipe or to a piece of copper driven into the ground.

To be uniform, I always specify that the metal that comes in contact with the body should be aluminum. This is not essential if testing but one at a time; but when using two persons at the same time, one as an indicator for the other, it is imperativ that the skin contact piece be of aluminum, or of some other metal of a uniform polarity.

Fig. 50 shows my *static grounder*. The metal hook with the weight on it can be of any kind of metal. It has a weight on the end of it so it can be thrown over a gas fixture, a wire or any grounding material, and stay where it is put. (Fig. 47.) The cord is the standard insulated battery cord. The shepherd's crook end is made of aluminum, and that is the end that comes in contact with the body of the individual being tested. There is a piece of rubber to insulate the cord tip as it goes into the aluminum. This is very important, as only one kind of metal should touch the skin.

As described in some of my previous writing, grounding individuals by means of standing them on an aluminum plate is not at all reliable unless the shoes and stockings ar removed.

The only reliable way of grounding an individual for Bio-Dynamo-Chromatic work is to hav the metal come in contact with the skin.

Grounding of a Person While Sleeping

The grounding of a person while sleeping can be done very wel by having any kind of wire (No. 32 or larger, anneald copper preferd) placed directly *under* the sheet on which he is lying. Hav the wire go across the bed about on a line with the shoulders insted of lengthwise. Attach one end of the wire to the upper part of the bedsted, and the other end attach to a gas pipe, water pipe, steam pipe, or to a piece of copper rod driven into the ground. This is mentiond when speaking of insomnia.

Ruby Light Dissipates the MM VR

If a person, possessing a normal MM VR, faces in the MM when grounded and in a subdued light, and a dark-room-ruby light is radiated on the bared chest and abdomen, the MM VR wil be immediately dissipated (Fig. 20).

The *reason* for this remarkable fenomenon seems to be plain. The magnetic-meridian energy is, in polarity, the same as that from cyan-blue radiant light—positiv.

The energy from dark-room-ruby light is the opposit —negativ.

The one energy interferes with the other, and so both ar neutralized.

Knowing this fact helps us very much in B-D-C work, as wil be seen.

When an individual with a normal MM VR is facing in the MM with the ruby light shining on the bared chest and epigastric region (Fig. 20), the tonicity of the body is temporarily the same as when she is facing east or west.

It is for that reason that the Bio-Dynamo-Chrome is facing the epigastric region in the various figures illustrating the tecnic of this work. (Figs. 13, 14, 16, 17, 20, 44, etc.)

By operating the foot switch in these figures, the ruby light that is shining on the epigastric region is extinguisht, and that *has the same effect as turning the patient from east or west to north or south,* provided the patient has a normal MM VR. This simplifies the B-D-C work greatly. It also acts as a check on the work; for if one gets a "reflex line" in the MM, and his tecnic has been correct, the ruby light wil dissipate that reflex.

(The body is grounded with the Static Grounder. Figs. 14, 16, 17, etc. show this Static Grounder in contact with the aerial wire, the aerial wire being attacht to a gas jet. All the other groundings ar similar to these, altho they may not show in the illustration.)

GENERAL OBSERVATIONS IN B-D-C TECNIC

The following ar some observations made in eliciting and demonstrating the sympathetic-vagal reflex.

1. Magnets, if in or anywhere near the room in which the B-D-C diagnosis is being made, should be flat on the floor.

2. A magnet (if pointing due east or west) that wil deflect a magnetic needle about six inches distant, can be used for differentiating polarity. This magnet should be enclosed in an aluminum shel and be supported on a stand. It should not be held in the hand.

3. Radiant colors ar far superior to magnets for differentiating rates and modes of motion.

4. Odors from cigars, pipes, cigarets, or the odor of anything nauseating, wil often inhibit or change the sympathetic-vagal reflex. Air overcharged with carbon-dioxid gas wil hav the same effect.

5. Any odor of cloroform, ether, or other anesthetizing vapor in the room wil inhibit or change the sympathetic-vagal reflex.

6. There should be only enuf light in the room to enable the operator to see the lines markt on the patient's body.

7. The patient or subject, upon whom the Bio-Dynamo-Chromatic tests ar made, should not extend the neck during the examination, but should look strait ahed, or down, as looking up at the ceiling wil elicit the sympathetic-vagal reflex.

8. No harsh words, or sudden movements to frighten or disturb the patient being tested, should be allowd in the examination room.

9. The diagnosing room should be quiet.

10. If the person to be tested has just come in from the bright sunlight, hav him sit facing east or west for several minutes before making the test.

11. The person being tested by the B-D-C method, should be stript to the waist.

12. If possible, hav the subject's bowels wel cleard before making the tests. This is especially important if the blue light is required to elicit the magnetic-meridian-sympathetic-vagal reflex.

13. Any energy that wil elicit the sympathetic-vagal reflex wil hold that reflex for only a certain period, the duration depending upon the individual. This seems to prove that the sympathetic nervous organism causing this reflex becomes fatigued and must hav a rest the same as voluntary muscles.

14. The sympathetic-vagal reflex seems to be a change in the condition of the organs, causd by a change in the blood vessels supplying these organs.

15. The magnetic meridian and radiant colors ar among the most reliable agencies for differentiating abnormal conditions of the body.

16. In making B-D-C tests, every detail as regards tecnic must be rigidly enforst, as we ar dealing with a nervous mecanism that is more sensitiv than any instruments made by hands.

17. Energy possessing only positiv polarity is dissipated by radiant, dark-room-ruby light.

18. Energy possessing only negativ polarity is dissipated by radiant, cyan-blue light.

19. Energy possessing "neutral" or unstable polarity is dissipated by radiant, neutral-violet light.

20. This seems to prove that dark-room ruby, or non-actinic rays of light, hav a similar effect upon the sympathetic-vagal reflex as negativ energy, or as negativ electricity. They must be in some way related.

21. It is wel known that the rays of light toward the red end of the spectrum ar stimulating. It is also wel known that negativ electricity is stimulating.

22. The fact that blue, or actinic rays, act on this reflex similar to positiv energy, or positiv electricity, seems to prove that they ar in some way related.

23. It is wel known that the colors toward the blue end of the spectrum ar sedativ in their action. It is also wel known that positiv electricity is sedativ in its action.

24. There ar many other reactions whereby we can prove that colors giv off polar energy. A very remarkable one is that which has alredy been cited, that is, that ruby light dissipates the effect of the magnetic meridian upon a helthy individual. Magnetic energy from the south-seeking or negativ pole of a magnet, if a certain tecnic is emploid, wil do likewise; while the positiv end of the bar magnet wil hav no such effect. The fact that the energy from the magnetic meridian, as it passes over the erth, is positiv in caracter, seems to giv us a reason for this very remarkable fenomenon.

25. Energy that can be dissipated by the negativ end of a bar magnet can also be dissipated by radiant, dark-room-ruby light.

26. Energy that can be dissipated by the positiv end of a bar magnet can also be dissipated by radiant, cyan-blue light.

27. Energy that can be dissipated by both poles of the bar magnet can also be dissipated by radiant,neutral-violet light.

28. The fact that some energies ar complex seems to be the logical reason why various colors which wil dissipate various complex energies, ar made by the combination of two or more colors.

This wil giv some idea of the manner in which I use colors for differentiating general toxemias and definit diseasd areas, as wel as for obtaining the sympathetic-vagal reflex, when the patient is grounded and facing in the magnetic meridian and in a subdued light.

The Superiority of Bio-Dynamo-Chromatic Diagnosis over all Others is that

1. It tels at once whether the patient has any toxemia or not, because if the magnetic meridian elicits the sympathetic-vagal reflex he is not suffering from any intoxication. That is, he possesses a normal celular rate and mode of motion.

2. The disease can be detected erlier than by any other known method. In fact, the effect of the magnetic meridian upon the individual's organism is immediately obliterated or changed at the very *inception* of a toxemia, that is, as soon as there is an abnormal celular rate and mode of motion.

3. The system is simple and can be carried out by any intelligent physician in his offis without any very great outlay for parafernalia, *but the tecnic must be exact.*

4. It makes the practising physician independent of any outside laboratory for making his diagnosis.

5. As the diagnosis can be made at once, without the delay of an outside laboratory man's report, proper treatment can be immediately inaugurated.

6. This method of diagnosis not only aids us in the diagnosis, but maps out the course of therapeutic procedure.

7. This method of diagnosis shows the activity of the disease as related to the resistance of the patient and thus aids us greatly in the prognosis.

TRANSLATING THE VR—(CONTINUED)

WORKING LINE AND REFLEX LINE

Fig. 51 represents a beef's bladder, *A*, into which has been placed a rubber bag, *B*, connected to the outside with a glass and rubber tube, *C*.

This bladder is fild with water and suspended to a hook in such a manner that it wil not touch anything.

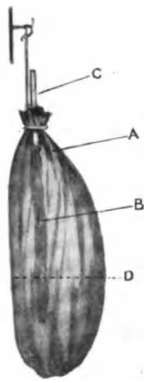
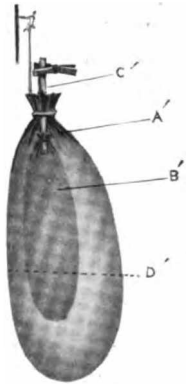


Fig. 51. Showing a beef's bladder *A* with a rubber bag *B* attacht inside to glass tube and nipple *C*. *D* represents the line of maximum dulness in that area.

Fig. 51x. Shows Fig. 50 blown up with air. The line *D'* is a finger's bredth lower down than *D* in Fig. 50.



Now, by using air-colum percussion, as has been previously outlined and going over the most convex side of this bladder from the bottom upward, an area of maximum dulness wil be met, that is, a point along the bladder wil be found where the pitch wil be higher than anywhere else.

In executing this air-colum percussion over the bladder, the pleximeter finger should not touch the bladder, but be about a quarter of an inch away from it.

When the area of maximum dulness is reacht, stop and make a mark on the bladder on a level with the under side of the pleximeter finger. This line is what I term *the Working Line.**

*The best pencil to use in skin marking is the American Pencil Company's Venus 6B Drawing Pencil. It is better than the imported dermatograf.

Now blow air into the rubber bag, as shown in Fig. 51-x and clamp the rubber-tipt glass tube so the air cannot escape. In blowing this rubber bag up, we hav increast the tension within the bladder.

Repeat the maneuver outlined for obtaining the Working Line. The area of maximum dulness wil now be from one to three fingers' bredth lower than it was before the tension in the bladder was increast. This line is what I call *the Reflex Line.*

The Reflex Line is Always Below the Working Line

Why is the Reflex Line below the Working Line? This is a matter of hydraulics, which is governd more or less by the shape of the bladder and by the tension.

This principle of a lowerd line in such a shaped container when the tension is increast helpt me to lay the foundation for the tecnic used in demonstrating the VR over the abdomen of a living person. It can also be shown on the abdomen of a dog and many other animals.

You wil observ that the shape of the beef's bladder and the outline of the cavity of the abdomen ar similar.

Figs. 52 and 53 show in detail how the Working Line, *W*, is higher than the Reflex Line, *R*.

There ar various methods for employing air-colum percussion to show this, but the most practical method, as wel as the most reliable one, is by means of the thimble-finger method alredy described.

The tecnic for air-colum percussion over the abdomen has been fully illustrated and described.

The Method of Getting the Working Line and Reflex Line Over the Abdomen

Ground the subject and hav her face east or west in a subdued light, following out the tecnic as previously described.

Rub French chalk or talcum powder over the area to be percust, using the pleximeter hand for doing this so there wil be powder on the pleximeter hand as wel as on the skin of the part to be percust.

Over the bare abdomen begin to percuss from the pubes upward until the maximum degree of dulness (the

highest pitch) is obtaind in that particular area. This is what I term the *point of maximum dulness* in that area. (Figs. 52 and 53, W. and W'.)

When this is found, mark with a soft pencil on a line with the under side of the pleximeter finger.

This line is the Working Line.

Observ that the Working Line is always obtaind when the person faces east or west, following out the tecnic for B-D-C diagnosis.

Get the first Working Line on the left side of the abdomen as shown in Fig. 52, W.

Then repeat the maneuver on the right side of the abdomen, keeping more central than lateral. (See Fig. 52 W'.)

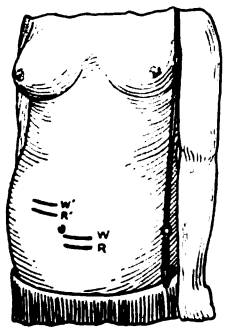


Fig. 52. Showing the working line *W'* and the reflex line *R*.

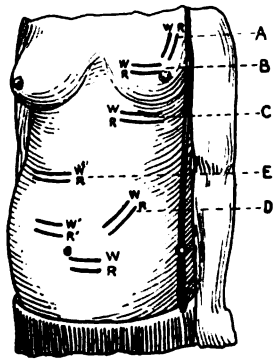


Fig. 53. Showing the working lines and the reflex lines on various areas of anterior part of body.

A—left side of hart.
B—lower side of hart.
C—lower side of pericardium.
D—outer roll of stomac.
E—lower border of liver.

The Working Line on the right side of the abdomen wil hardly ever be on the same level as that on the left side, owing to the difference in the contents of the abdomen on the two sides and also owing to a relaxation in the splancnic vessels in almost every individual who has had to be on his feet a good deal after he is twenty-five years old. In a child the two lines come practically on the same level.

(The farther apart the two Working Lines ar, the greater is the splancnic insufficiency of the individual. This

is one method of diagnosing enteroptosis, that is, insufficiency or lack of tone, of the splancnic vessels.)

The Working Lines can also be obtaind just below the border of the liver (Fig. 53, E), over the greater curvature of the stomac (Fig. 53, D), under the pericardium (Fig. 53, C), at the axillary border of the hart (Fig. 53, A), over the apex of the hart (Fig. 53, B), under the spleen, under the kidneys, and at times in other locations. Just now, we ar more interested in the Working Lines over the abdomen, as illustrated in Fig. 52.

After having obtaind the Working Lines on the abdomen or elsewhere, turn the person so as to face exactly north or south. Wait about a minute and *repeat the maneuver* for getting the Working Line.

If the subject is helthy, that is, possesses a normal rate and mode of motion, the point of maximum dulness wil now be from one to three fingers' bredth below the working line.

This second line is what I call *the Reflex Line*, and is represented in Figs. 52 and 53, by R and R'.

If the Working Line had been obtaind over the greater curvature of the stomac, the Reflex Line would be toward the patient's left (Fig 53, D). If over the axillary border of the hart, it would be toward the axilla on the patient's left side (Fig. 53, A).

When the Reflex Line is elicited by means of the magnetic meridian energy, it is cald the magnetic-meridian- sympathetic-vagal reflex (MM VR).

The MM VR can be obtaind only when the patient faces north or south, because it is the sympathetic-vagal reflex, VR, elicited by means of the magnetic meridian, MM.

If the VR is elicited by any energy other than that of the magnetic meridian, the patient must always face east or west. Do not forget this.

If the VR is elicited by means of the energy from a magnet, it would be cald a *Magnet VR.* If from radium, it would be cald a *Radium VR.* If from an x-ray, it would be cald an *X-ray VR.* If from human energy, as wil be describd later, it would be cald a *VR elicited by means of Human Energy,* and so on.

In Bio-Dynamo-Chromatic diagnosis, we ar interested more in the *Magnetic Meridian* energy and energy from *Radiant Colors* than any others.

Fig. 44 illustrates the manner of sitting, holding the fingers, the grounding of the patient, and several other details that wil be brot out as we procede.

If the patient is suffering from tuberculosis, cancer, syfilis, gonorrhea, or other profound toxemias, it wil be impossible to elicit the MM VR without the use of some energy to temporarily interfere with the abnormal energy emanating from the toxemic body.

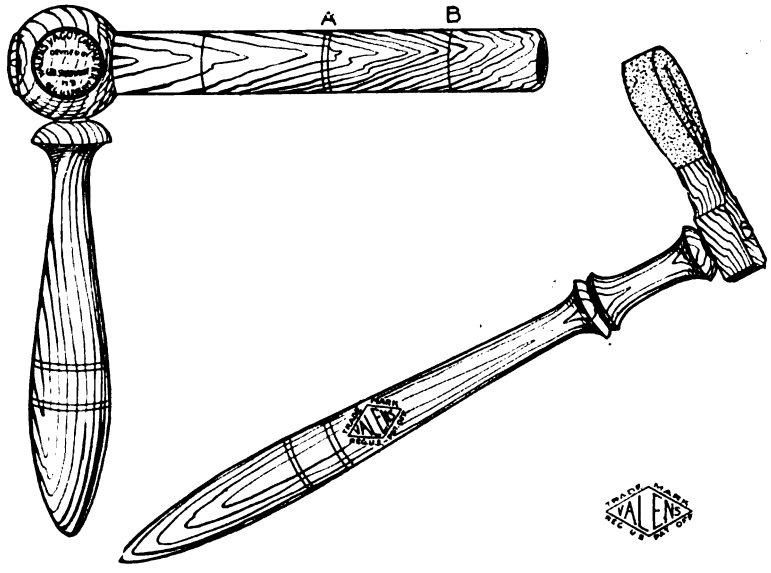


Fig. 54. Valens Vagotonometer with felt hammer used in operating it.

Radiant Colors Designate the Toxemia

For ascertaining the caracter of the toxemia, I use radiant colors.

The color that enables one to elicit the MM VR indicates the nature of the disease.

A normal MM VR signifies that the VR can be obtaind by means of the MM without any radiant color.

An abnormal MM VR signifies that no MM VR can be elicited without some radiant color.

With an abnormal MM VR there wil be no Reflex Line because the point of maximum dulness wil be identical with the Working Line.

By reviewing what was said regarding the Working Line and Reflex Line on the beef's bladder, you wil see that the *Reflex Line is causd by an increase of tension within the cavity.*

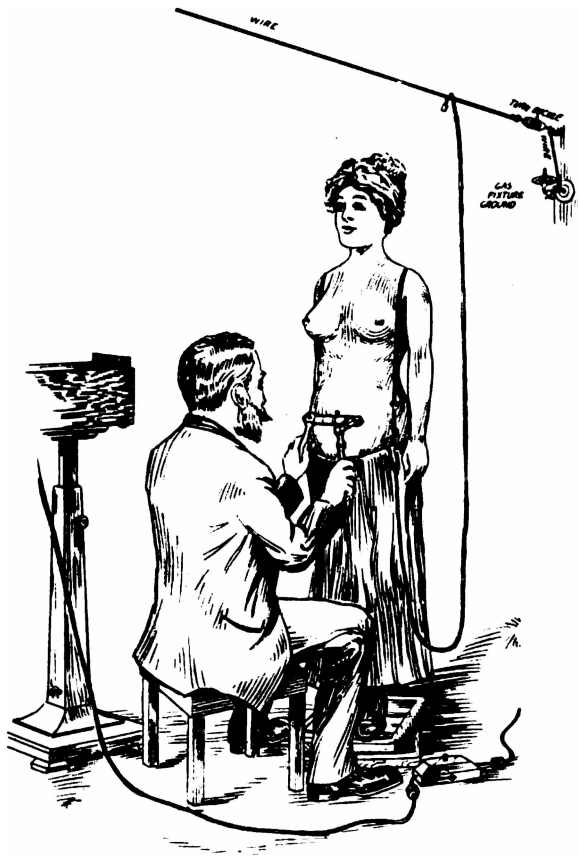


Fig. 55. Valens Vagotonometer in use. Notis that the double line on the tube is to be placed over the linea alba.

This is another method of proving that the sympathetic-vagal-reflex (VR) means an increase of tension in the vascular system, brot about by excitation of the nervs governing this mecanism.

Other Means of Demonstrating the Elicitation of the VR Besides Air-Colum Percussion

Valens Vagotonometer

Fig. 54 illustrates this instrument.

Fig. 55 shows how the Vagotonometer is used. The two lines, *A*, Fig 54 on the wooden tube ar placed over the linea alba just above the pubes, and the tube is struck a firm staccato blow (with the felt hammer that is made for it) on the right side of the single line, *B*.

Dust the abdomen wel with French chalk or talcum powder, the same as for thimble-finger air-colum percussion.

The *relativ* difference between the Working Line and the Reflex Line with the Vagotonometer wil be the same as with the thimble-finger air-colum percussion, but the line with the Vagotonometer and that with the thimble-finger air-colum percussion need not coincide.

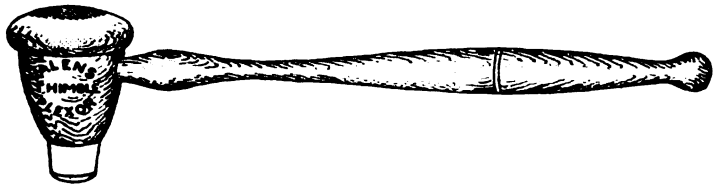


Fig. 56. Valens Thimble Plexor. To meet the requests of many physicians who for some reason cannot use the regular, loaded, celluloid thimble on their finger, I hav devized a Thimble Plexor, illustrated herewith. This thimble is loaded with beeswax and shot and is so constructed that it givs the same resistance and sound as the finger. The wood work is highly polisht hard wood.

The fysics governing the use of the Vagotonometer is that the colum of air within the tube vibrates, and its pitch is in direct ratio with the tension of the sides of the tube. The side next to the body is variable while the side away from it is constant.

The tube is made of the best "violin wood" so as to giv it resonance.

Valens Thimble Plexor is shown in Fig. 56 and its manner of use is shown in Fig. 57.

Some physicians hav either lost the use of their index finger of the right hand, or they cannot manage the plexor thimble in hot wether. For some reason or other they

wanted me to devize a substitute for the plexor finger. The thimble is loaded with wax and fine shot, and so put into the wooden "acorn" that the percussion effects ar the same as for a finger with a plexor thimble on it.

I hav not yet devized anything to act just as wel as the pleximeter finger, but the *Vagotonometer* comes very near to it.

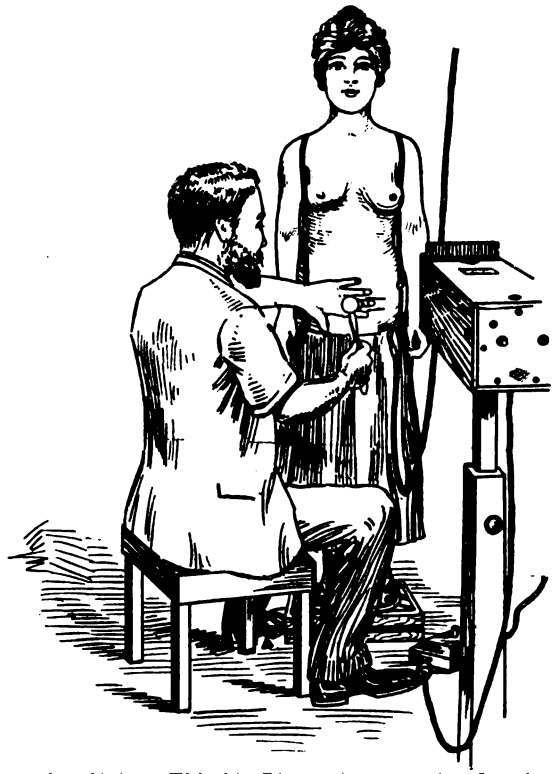


Fig. 57. Showing Valens Thimble Plexor in use. The Pleximeter fingers ar held as in thimble-finger-air-colum percussion.

Valens Organotonometer

Fig. 58 illustrates this instrument.

Fig. 47 shows the manner of using it. It is grasped tightly in the left hand with the handle resting on the shoulder of the patient so as to keep the instrument at a uniform distance from the chest. It can also be used over the stomac or abdomen if it is held at a uniform distance from the skin.

The secret of using the Organotonometer is to keep it at a uniform distance from the body. When used correctly it is a wonderful little instrument. Some of my most difficult diagnoses hav been made by the use of the Organotonometer.

The glass nobs, *B*, in Fig. 58 ar for lightly resting the Organotonometer against the abdominal wall when it

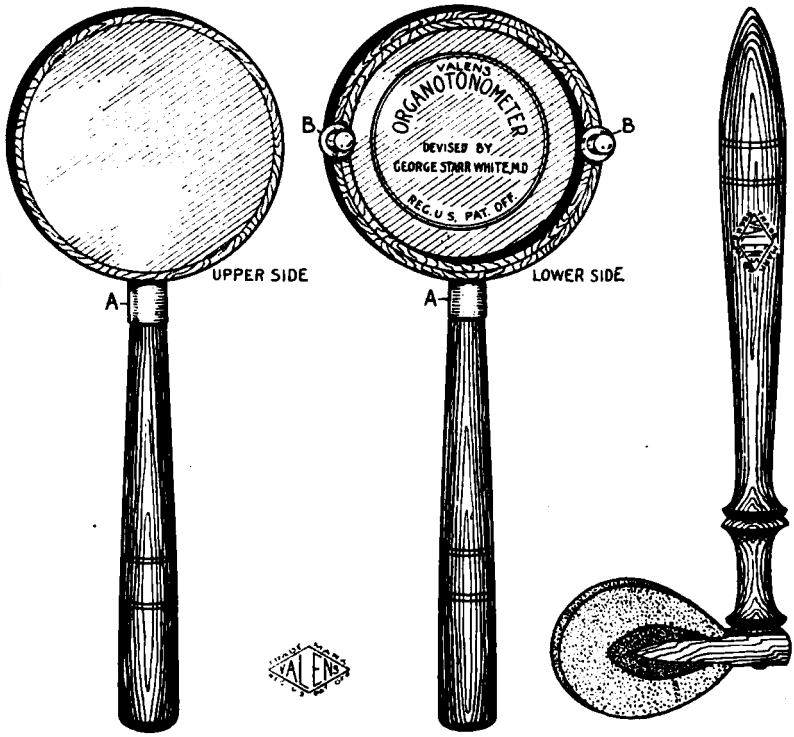


Fig. 58. Showing both sides of Valens Organotometer and felt hammer used with it. *A* is the shock absorber. *B.B.* ar glass nobs.

is used over that area; but when it is used over the chest, as illustrated in Fig. 47, the glass nobs should not touch the skin. In fact, it is better to use it in that position without the glass nobs.

A special, low-register, piano felt-hammer is used for striking the Organotonometer, and the contact must be made on the shock absorber, *A*, Fig. 58.

TECNIC

The Organotonometer can be best used with the ruby light.

Another way to use the Organotonometer is to hav it placed over the chest, as illustrated in Fig 47, while the patient is facing east or west. Turn the patient to face exactly north or south and then *immediately* sound the instrument. That is the *Working Note.* Sound the instru-

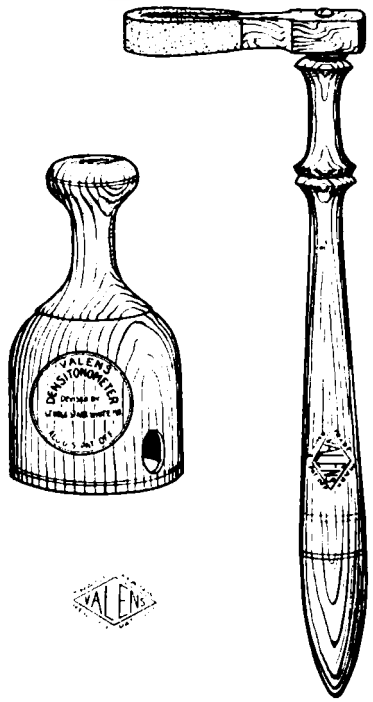


Fig. 59. Showing Valens Densitonometer and the felt hammer used in operating it.

ment stedily, hitting it about every three seconds. The *Reflex Note* (higher pitch) wil be observd within half a minute, if the patient possesses a normal MM VR.

If the patient has an abnormal MM VR, shed the colors on one by one, as described later, until the *Reflex Note* is elicited.

Valens Densitonometer

Fig. 59 shows this instrument and Fig. 60 illustrates the manner of using it. This is a very unique instrument and wil translate tension quite wel. It has its special uses. The tecnic is the same as for the Organotonometer.

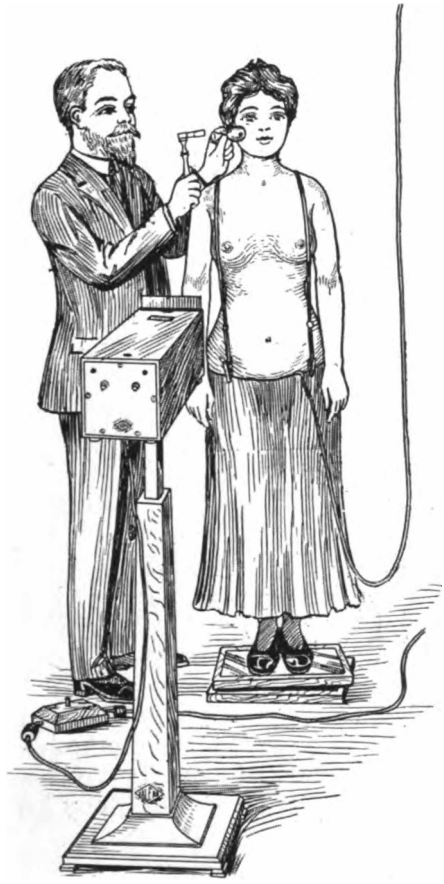


Fig. 60. Showing how to use Valens Densitonometer.

Valens Super-Densitonometer

Fig. 61 shows this instrument. The tecnic for using it is similar to that for using the Densitonometer, illustrated in Fig. 59. For locating tumors or different thicknesses about the tables of the skul, the Densitonometer and Super-Densitonometer ar unique.

Valens Air-Colum Tube

Fig. 17 shows this instrument in use. It is a hard rubber tube with a piece of rawhide very tightly lasht to the top end. Outside the tube is a tubular nipple, to which is attacht aural pieces the same as ar used on a stethoscope.

Valens Diagnostofone

Fig. 15 shows this instrument.

This is probably the most delicate, simple instrument for demonstrating a change of tension.

This Diagnostofone is made of "violin wood" and contains a brass tung reed so shaped as to giv a very low vibration. This instrument is so delicate that a piece of paper pasted under a two-inch plank can be located when sounding the Diagnostofone over the upper side of the plank.

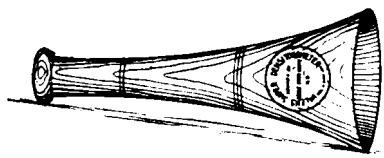


Fig. 61. Showing Valens Super-Densitonometer. It is hollow thruout and magnifies sound in a remarkable manner. It is made to demonstrate changes of density. The same felt hammer that is used for the Valens Densitonometer is used with this.

The tecnic for using the Diagnostofone must be very exact. Fig. 13 shows how to place the body in holding this instrument so the pressure against the body wil be uniform.

In using the Diagnostofone, the Ruby Light Tecnic has to be employd.

Auscultation to Demonstrate the Elicitation of the MM VR

I hav had a great deal of experience with stethoscopes, having tried every new stethoscope I could find, and even making them myself. I wanted to find a stethoscope that would record the sympathetic-vagal reflex. The only stethoscope I hav ever found that would meet my requirements and that would wel demonstrate the sympathetic-vagal re-

flex is that illustrated in Fig. 62 and known as *Scott's Non-Roaring Stethoscope.* This stethoscope is the invention of Dr. Walter E. Scott and is constructed so that no vibration can be carried thru the fingers to the ear. This stethoscope is of great value in demonstrating the sympathetic-vagal reflex, as shown in Fig. 63.

Organ Pipe Vibration

Figs. 12 and 14 show two of my erly methods of demonstrating the elicitation of the MM VR. In experimenting with air-colum vibration, I made whistles and pipes of all sizes and dimensions, and blew them while placing the large end over various substances. I found I ob-

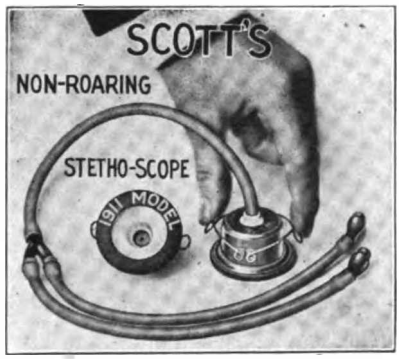


Fig. 62. Invented and made by Dr. Walter E. Scott of Adel, Iowa.

taind a different pitch or quality of tone, depending upon the specific gravity of the substance over which the vibration was made. When doing this over the body, I obtaind a different tone when the body was facing east or west than when it was facing north or south.

By standing on a revolving platform and continually blowing on these pipes, as illustrated in Fig. 14, a change of pitch wil be observd as soon as the helthy individual faces in the MM.

Shedding the ruby light on the bare trunk of a normal subject while they ar facing in the MM lowers the tone the same as if the body wer facing east or west.

My large revolving platform that I use for experimenting in this work can be turnd by a motor and reversing capstan, or by pulling on guy ropes, A and B, Fig. 14. This turntable I hav used in all of my experimental work, but it

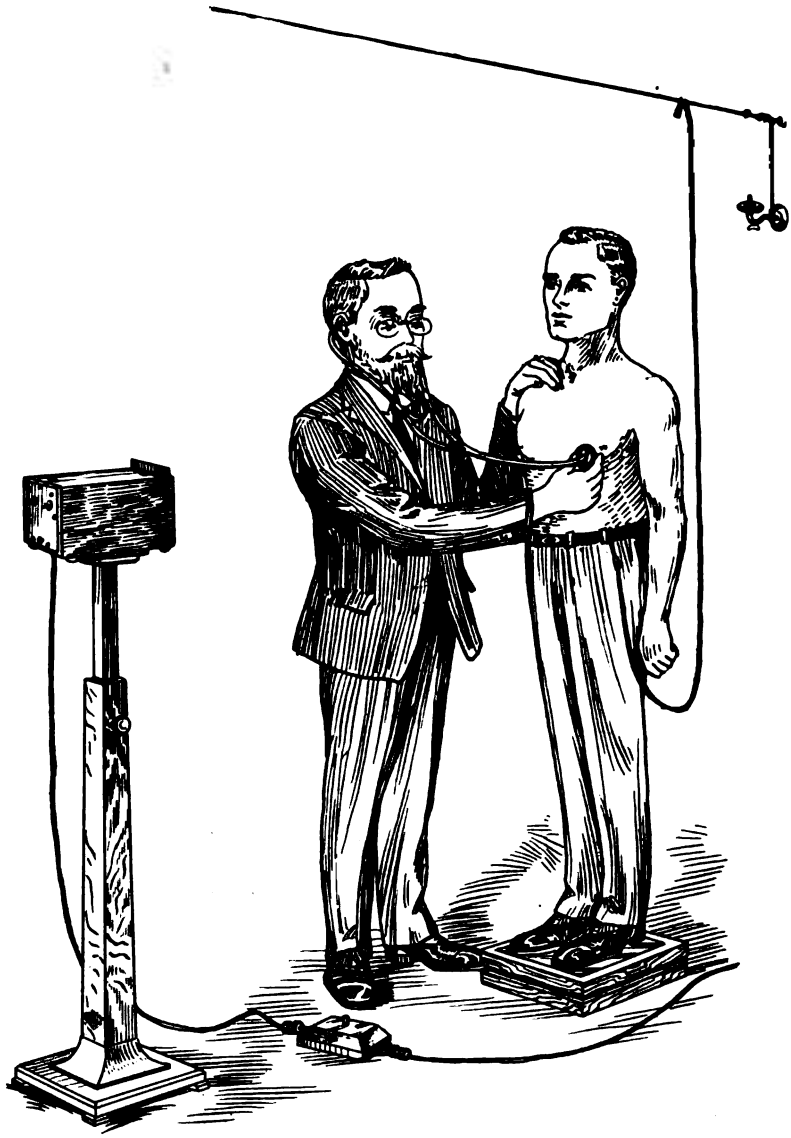


Fig.. 63. Showing how the Scott's Non-Roaring Stethoscope can be used to demonstrate the elicitation of the MM VR.

is too large to be practical for regular work. The small one, shown in the various figures, ansers the purpose for diagnosis.

Fig. 64 shows how, by means of the *Valens Practis Drum* and an Organ Pipe (blown by comprest air), the change of pitch can be proved to be causd by change of tension in the drum.

Inasmuch as there is the same rise of pitch when the VR is elicited, it proves that this fenomenon is causd by a change of tension in the body.

For accurately gaging the change of pitch over the body when the elicitation of the VR is demonstrated by

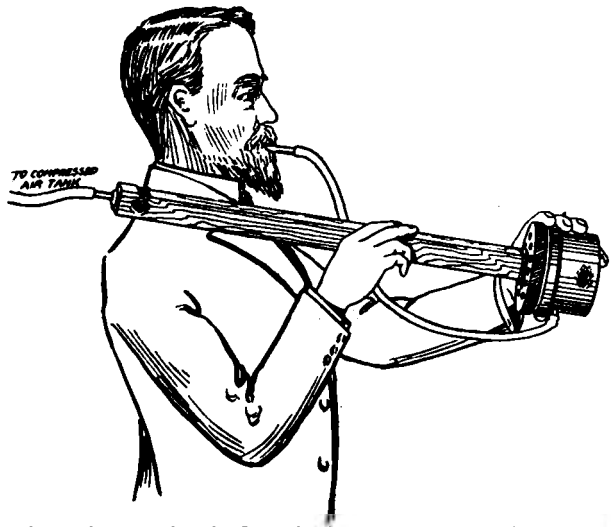


Fig. 64. Changing tension in Practis Drum to change pitch of organ-pipe vibration.

means of the Organotonometer, Organ Pipe, or Diagnostofone, I hav used *Sonometers*. One of the first sonometers that I used is shown in Fig. 9, and a later one is shown in Fig 10.

A violin in the hands of a person with a wel traind ear is the best sonometer for demonstrating accurately the change of pitch which takes place in air-colum vibration.

Another method I formerly used for demonstrating the change of pitch was by using a specially constructed sounding board with fine strings over it, each varying in

pitch one-quarter tone. These strings would vibrate when a sympathetic note was struck; and by training the ear I was able to tel just what change took place.

These sonometers ar not essential for the work. I used them in reserch work.

I hav used wooden xylofones (Fig. 65) also for mesuring change of tones.

The Dual Puls Fenomenon

Fig. 66 shows how to take the two pulses simultaneously. They should be on a level with the hart and the operator should stand so as not to directly face the patient. Fig. 66 illustrates this very wel.

First palpate the two pulses while the patient is facing east or west, following out the tecnic as described for B-D-C work. Notis just how high each puls is. Notis whether the peak of each is the same or not. Notis whether the puls appears softer on one side than on the other. In fact, make a mental picture of just what each puls means.

Fig. 65. Showing a plain, wooden xylofone I formerly used to check up change in pitch in air-colum percussion. Such instruments ar not at all necessary.

After this mental picture is made, turn the patient to face exactly north or south. If there is a normal MM VR, within one or two minutes there wil be a decided change in the pulses. The one that was soft may become harder, and the one that was hard may become softer. The one that had a lower peak may now hav a higher peak, and the one that had a higher peak may now hav a lower peak.

When the VR is elicited, there is *always a change in the pulses,* which can be demonstrated very redily by means of the dual-puls system.

Fig. 66 shows how a watch can be suspended about the patient's neck and the puls counted. In every normal individual the count wil be different when the patient faces north or south from that obtaind when he is facing east or west.

Caution: In palpating for this puls fenomenon, the physician must educate himself to eliminate his own puls as he turns with the patient.

This puls fenomenon can be demonstrated with a person sitting up in bed, provided he is grounded and all the other tecnic is carried out according to the instructions for B-D-C work.

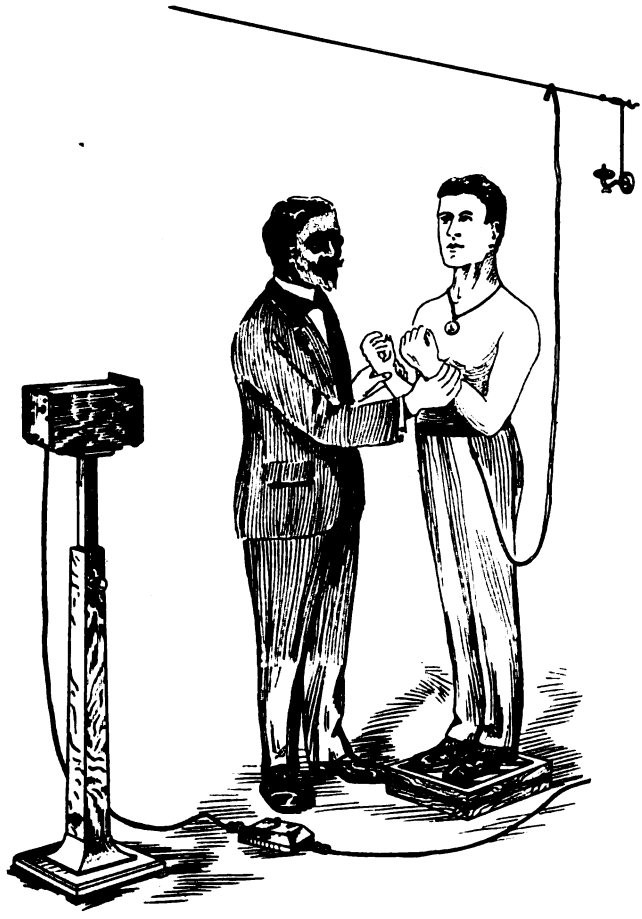


Fig. 66. Showing manner of taking two pulses simultaneously—Dual-Puls system. The watch suspended about neck of patient is for counting the hart beats. Notis the position of physician compared with that of patient.

Fig. 67 shows how one can take his own two pulses simultaneously. It is good practis for the physician to educate himself to take two pulses simultaneously.

(More is said regarding this puls fenomenon in discussing splancnic insufficiency.)

Demonstrating the Elicitation of the MM VR Automatically

There ar several mecanical methods whereby one can demonstrate the elicitation of the MM VR, but for practical diagnostic work, the methods alredy outlined probably ar the best.

Air-Colum Percussion stands out as the best method, and next to that is the Dual Puls system.

All the little devices that hav been described for this work ar for demonstrating the same fenomenon, that is, increast tension in the vascular system.

Fig. 67. Showing how one can take his own pulses simultaneously. This figure shows the thum of the right hand and the fingers of the left hand opposit the operator's eyes.

I wil now mention several automatic as wel as other methods of demonstrating the elicitation of the MM VR to giv a broader idea of the fysics underlying this great work

The Practis Drum as a Means of Demonstrating the Elicitation of the MM VR

Valens Practis Drum has been described. It is illustrated in Fig. 19.

While this device is made for practis in cultivating the ear for interpreting air-colum vibration, yet it can be used in a very unique manner to demonstrate the underlying principles of B-D-C work.

As previously described, this drum is air-tight with the exception of the nipple, to which is attacht a rubber tube.

If the mouthpiece of this rubber tube is taken in the mouth and the lips closed around it so as to make it air tight, the air in the drum, and in the tube, and in the mouth and farynx ar continuous. (Fig. 101.)

Now in a dark room, while grounded and facing exactly east or west and the tube in the mouth as abov described, breathe regularly thru the nose making no change in the muscles of the farynx. By means of air-colum vibra-

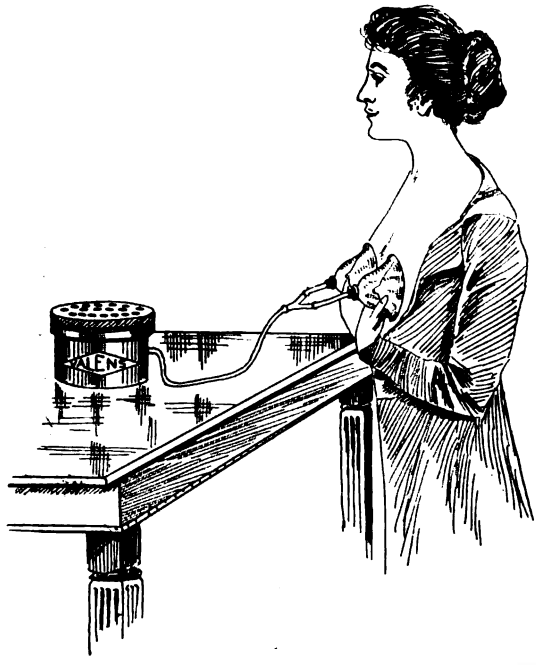


Fig. 68. Showing a Valens Practis Drum connected to the brests. The tension in the drum changes as the lady turns from east or west to face north or south. She must be grounded and in a dark room.

tion, either thru the fingers or some other instrument (Fig. 101), get the tone over the drum while in this position. (Fig. 64 shows how this can be done with comprest air.)

Then turn so as to face exactly north or south and immediately percuss over the drum again, holding the plexi-meter finger in exactly the same position by means of rest-

ing two other fingers on the drum. (Fig. 35 or with Organotonometer, Fig. 101.)

Keep percussing, and if there is a normal MM VR, the note over the drum wil soon rise. This is causd by a change of tension in the oral cavity and farynx. As that tension is changed the tension is also changed in the drum, and the note rises—*Reflex Note.* (Fig. 101 illustrates this tecnic very wel.)

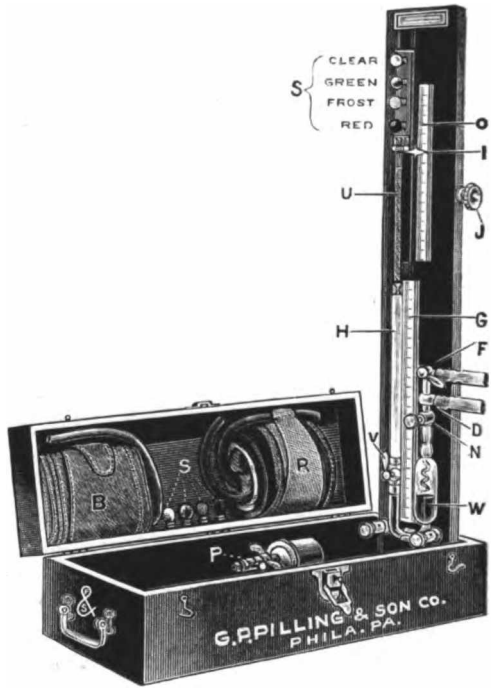


Fig. 69. Special Sfygmo-Manometer devized by me for grafically demonstrating the elicitation of the MM VR. This is known as the Pilling-White Sfygmo-Manometer.

Another very unique manner of demonstrating the elicitation of the MM VR by means of the practis drum is illustrated in Fig 68.

While the subject (preferably a young lady) is facing east or west, grounded and in a subdued light, place a twinbel jar over the two brests, the rubber tube being connected with the practis drum.

Now turn the subject so as to face exactly north or south and immediately begin percussing or sounding some vibrating instrument over the practis drum. The change of tension in the brests wil change the tension in the drum, and the tone wil rise (Reflex Note) if there is a normal MM VR. By employing the Ruby Light tecnic this demonstration is very startling with a helthy subject.

The Sfygmo-Manometer as a Means of Demonstrating the Elicitation of the MM VR

The ordinary Sfygmo-Manometer, especially of the mercury variety, wil demonstrate the change of tension in the blood vessels, but for showing it in a grafic form, I hav devized a special Sfygmo-Manometer, shown in Fig. 69.

The following is a description of this instrument.

The Pilling-White Grafic Sfygmo-Manometer

Description

The box is of quarterd oak and has a lock and handles on the lid and on the upper end. It contains extra lamps and an extra battery cel, an air pump, and tubing of special length.

The upright standard automatically makes contact with a dry cel in the box, when it is placed in an upright position. It is easily removd from the upright position and laid flat in the box for carrying. Cushiond posts ar on the lid so as to hold the standard firmly in place. The stop-cock *V* and special manometer *W* prevent the mercury from running out. The standard can be suspended on a wall, and electric wires from batterv cels fastend to the binding posts at base end of standard.

Four insulated wires *U* ar bound together and with bared ends ar placed in the mercury colum tube *H*. The outside ends of the four wires ar fastend to a lamp carriage and each one connected by a hidden wire to each of the four lamp sockets *S* in same. *J* is a milld screw connected to a hidden rack and pinion for moving the lamp carriage up and down. *G* is a sliding scale for mesuring blood pressure in millimeters, as wel as the excursion of the mercurial colum. It is graduated up to 300 mm. There is also a slid-

ing scale *O* with pointer *I* on the lamp carriage so the index can be made to correspond with that on the mercury-colum tube. *P* is the pump. The stop-cock *F*, lets the air in from the pump. *R* is the standard cloth arm band over a rubber bag. *B* is a hevy lether abdominal band covering a rubber bag, which can be used over the stomac region. *D* is the connection for the air bag. *N* is the air-release screw.

Hidden wires come thru from the back of the standard so as to be in contact with the mercury when it is in the glass

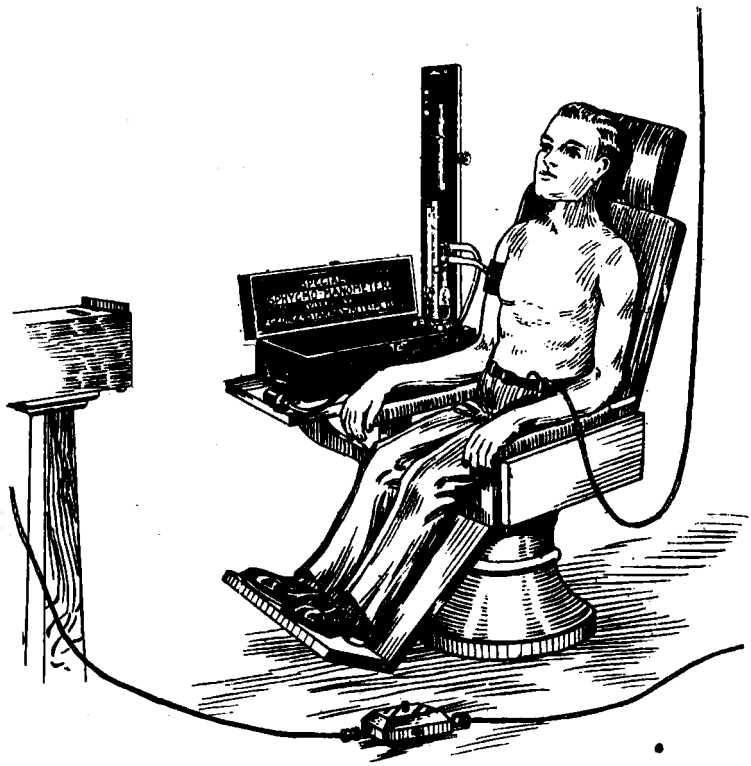


Fig. 70. Showing how the special Sfygmo-Manometer is used to demonstrate the elicitation of the MM VR.

tube. These hidden wires ar so arranged that they ar attacht to binding posts or contact pieces, that ar in contact with a battery cel. All the lamps, manometer, and the mercury colum ar in series when the mercury touches the bared extremity of the wires in the mercury tube. According to the contraction or expansion in the air bag, the colum of

mercury rises and falls and so lights one, two, three or four lamps. These lamps ar of different colors to quickly show the variation in pressure. The lowest or first light is red; the second, white or frosted; the third, green; and the fourth, bright. The wire lighting the second lamp is 2 mm. higher than the first, the next is 1½ mm. abov that, and the next is 1 mm. higher than that.

Fig. 70 illustrates how this Special Sfygmo-Manometer can be used for demonstrating the elicitation of the MM VR. I put a normal, helthy person in a dimly lighted room

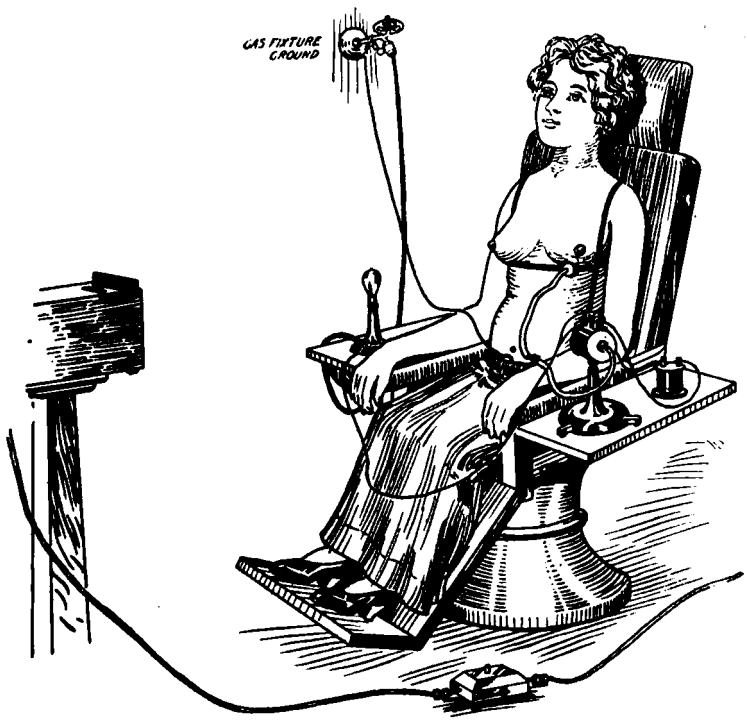


Fig. 71. Showing how the Valens Cardio-Relay Interrupter can be used to visualize the elicitation of the MM VR

and ground him. The instrument is attacht as shown in the illustration. While he is facing exactly east or west, I adjust the instrument so the lower light just lights at each pulsation. I then slowly revolv the chair until he is facing exactly north or south. As soon as that point is reacht there

wil be a change in the puls, as wil be demonstrated by the change in the lights on the upright. This is a beautiful demonstration of the elicitation of the MM VR.

While this normal person is facing exactly north or south, if a true-ruby light is shed on him, the lights on this sfygmo-manometer wil show the same as when he was facing at right angles to the MM, i. e., east or west.

While a normal individual is facing in the MM and grounded, there wil be a change in the blood pressure when

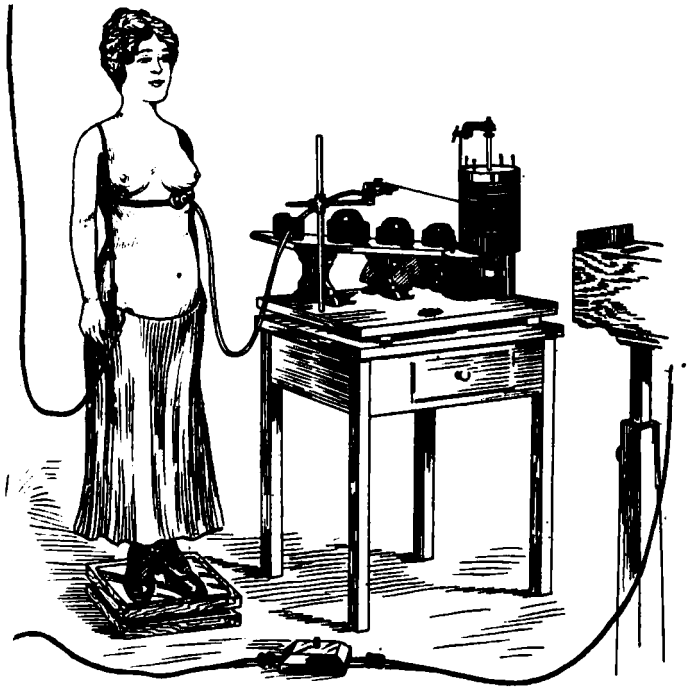


Fig. 72. Shows the Valens Cardio-Kymograf in use to record the elicitation of the MM VR. This same instrument is made to hold the Valens Plethysmo-Cardiograf illustrated in Fig. 73.

the ruby light is shed on the bare chest, if the patient is in a very dimly lighted room.

For taking the blood pressure, which I do with every new patient, I use this instrument and take the pressure while the patient is facing east or west, and make the records accordingly.

This instrument is more sensitiv than the ordinary mercury sfygmo-manometer.

Altho I hav used all kinds of sfygmo-manometers of the aneroid type, I think the mercury colum style is more accurate, altho it is not as convenient.

Valens Cardio-Relay Interrupter

Fig. 71 shows a patient with my specially constructed Cardio-Relay Interrupter attacht over the hart. This device is so sensitiv that the beat of the hart wil intermit a 110-volt lamp that is shown in the figure. This lamp must be maskt. The patient is grounded and the trunk bare. The room is quite dark.

Revolving the patient from east or west to north or south wil change the meter of the beats of the hart, as is demonstrated by the difference in the intermittence of the light.

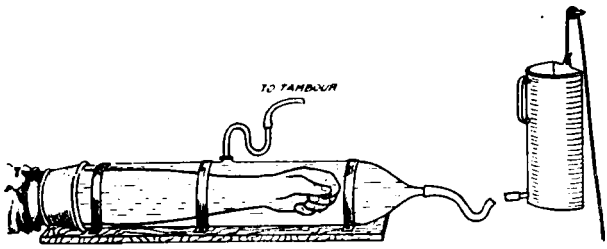


Fig. 73. Showing Valens Plethysmograf to be used in conjunction with the Kymograf outfit shown in Fig. 72.

This is an extremely sensitiv apparatus and very expensiv, and I had it made only for reserch work. It is not practical for diagnostic work as it takes so long to adjust it.

Valens Cardio-Kymograf

Fig. 72 shows the use of my specially made Cardio-Kymograf attacht over the hart of a subject. As this helthy subject is revolvd from east or west to north or south, the change of pressure in the tambour elevates or lowers the very long stylus, as is recorded on the revolving drum.

The figure shows the stylus in position when subject is facing east or west. As she is revolvd to face in the MM,

the stylus wil rise to the top of the drum and then gradually recede as the reflex becomes dissipated. (See white lines on smoked drum.)

Valens Plethysmo-Kymograf

Valens Cardio-Kymograf is made to work in connection with a *Plethysmograf,* as shown in Fig. 73. This Plethysmo-Kymograf registers the tension in the capillaries and as the vessels dilate, the water in the glass receptacle is comprest and is transmitted by means of the air-tube to the tambour. That operates the stylus which records the change on the revolving drum.

This is also a very elaborate outfit, and I hav used it only for reserch work.

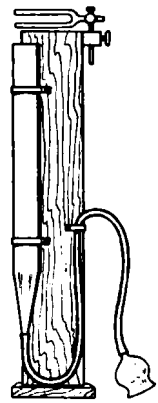


Fig. 74. Showing a Resonance Tube used in my erly work in demonstrating the elicitation of the MM VR.

In using the cardio-kymograf or the plethysmo-kymograf, or any of the other recording instruments, the patient as wel as the table on which ar placed the instruments and Bio-Dynamo-Chrome, should be on a large revolving platform operated by an electric motor, as shown in Fig. 14.

Demonstration of the MM VR by Means of a Resonance Tube

Fig. 74 represents a Resonance Tube which I used in my erly experiments for demonstrating the elicitation of the

sympathetic-vagal reflex. It consists of an upright to which is attacht a glass tube. To one end of the glass tube is attacht a rubber tube with a small glass bel jar on it. Over this resonance tube a tuning fork is rigidly placed.

When this glass tube is partially filld with water and pressure is made over the bel jar, the level of the water in the tube is changed. A vibrating tuning fork over this glass tube wil accurately demonstrate the minutest change in the height of the liquid in the tube, even when the naked eye cannot detect it.

When the bel jar is placed over the bare abdomen or chest of a helthy individual, who is grounded and in a subdued light, and he is revolvd from east or west to north or south, the vibrating tuning fork wil show a rise of pitch.

When this normal subject is grounded and facing north or south, if a ruby light is shed upon his bare trunk and then extinguisht, the pitch of the vibrating tuning fork wil rise very quickly.

This is a most delicate and remarkable demonstration of the effects of the magnetic meridian upon the body and the effect of the ruby light in temporarily dissipating the effects of the magnetic meridian upon a helthy individual. Of course the better the ear of the investigator is traind, the more easily wil he detect the variations of pitch as demonstrated thru this resonance tube.

An Ocular Reflex

This particular reflex is produced if the 6th and 7th cervical vertebrae ar stimulated by means of sudden hammer blows (concussion), vibration, or other localized energy.

It is also elicited in a helthy individual, if he is grounded and in a subdued light and turns from facing east or west to north or south.

By means of the ofthalmo-axonometer or the *punctometer* which are instruments for testing the ocular accommodation, this ocular reflex can be very redily demonstrated. This reflex wil change the accommodation as is shown on the graduated bar of these instruments, and this wil vary according to the density of the crystalline lens and the person's sympathetic susceptibility. This change in accommodation wil vary from ¼ to 3+ diopters.

This reflex wil obtain for from a minute to several minutes, depending upon the subject.

Another way of demonstrating this ocular reflex is by trying to read very fine type while grounded and facing east or west, and then repeating the procedure while facing north or south. Invariably a helthy individual wil be able to read finer type while the magnetic-meridian-sympathetic-vagal reflex obtains.

Fig. 75 represents the standard *Ofthalmo-Axonometer* devized by H. E. MacLaughlin, MD., of Waupaca, Wis., and manufactured by the Lueck Mfg Co. of Milwaukee, Wis. This instrument I purchast purposely for demonstrat-

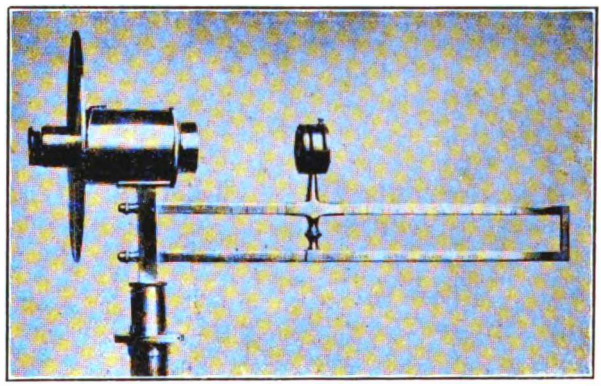


Fig. 75. The Standard Ofthalmo-Axonometer, which can be used to demonstrate the elicitation of the MM VR.

ing this ocular reflex. (Some hav reported my experiments as theirs, when in reality they never ownd the instrument or saw it in use except in my laboratory. They hav even copied my drawings.)

The *principles* upon which this apparatus works ar:

1. The scaling down of the distance type and fan chart to a range of a few feet, and stil preserving the requirements of the standardized visual angle.

2. The substitution of the focal length of the lens for the actual lens itself.

Mecanism

In the neutralizing telescope there is placed a +8 lens. The emmetropic eye at the telescope wil read the "fogging" type at zero. By sliding the dial carriage on the beam backward and forward, according to the gradations engraved on the beam, plus and minus corrections of the indicated dioptric lens ar obtaind.

Recording This Ocular Reflex

I hav the same radiation of light on the disc regardless of the position of the instrument. This is accomplisht by having a small light attacht to the instrument and reflected on the disc.

I ground a helthy subject and hav him first face east or west. By sliding the disc-carriage away from the telescope several diopters beyond zero, the "fogging" lens of the disc is in such a position that the eye looking thru the telescope is "fogd" and can observ nothing.

By sliding the disc-carriage slowly toward the telescope, while the observing eye is looking thru it, when the proper location on the beam is reacht the observing eye can redily read the letters on the chart. I record the reading on this beam and immediately slide the carriage away so as to again "fog" the eye.

One must not allow the eye to accommodate, but use entirely the "fogging" or "subjectiv" method.

I then turn the instrument and subject so they ar facing exactly north or south, stil grounded as before. I immediately move the disc-carriage to such a location on the beam as to make the letters on the chart of the same clearness as they wer while the subject was facing east or west. I record this from the scale and, as a rule, find that with a helthy individual, the carriage has been movd from one-half to three diopters nearer the telescope than when the subject was facing east or west. This means that a plus lens would hav to be put into the cel-frame in front of the telescope to make the eye, after such a stimulation, read without accommodation, at the same distance as it did while the subject was facing east or west. In other words, *the magnetic-meridian energy causes a reflex stimulation which temporarily changes the accommodation mecanism in the eye.* The amount of change wil usually depend upon the

age of the subject. As a rule, the older the subject, the less wil be the change. The degree of change is apparently dependent upon the consistency of the lens and the susceptibility of the subject.

In this method all subjectivness is obliterated as the subject has no way of telling what the location of the carriage is on the beam while he is looking thru the telescope.

The Cause of This Ocular Reflex

This Ocular Reflex seems to be produced by the stimulation of that part of the ganglionic cord supplying the accommodation mecanism, and latency is uncoverd thru this stimulation.

I am aware of the fact that various writers hav mentiond that an exofthalmos can be seen to recede, following

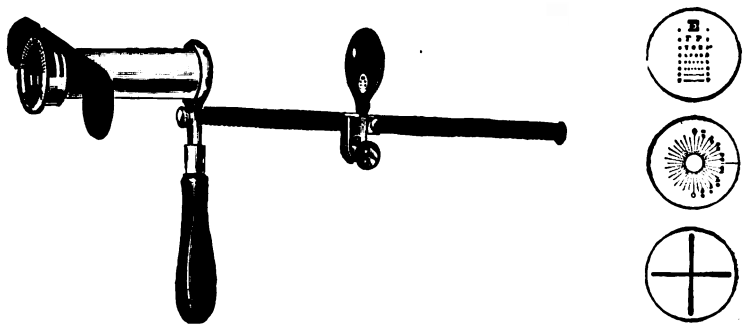


Fig. 76. The Punctumeter and Targets manufactured by F. A. Hardy & Co., Chicago. This instrument can be used to demonstrate the elicitation of the MM VR.

several severe hammer blows on the spine. This fenomenon occurs if the chest is likewise concust a few times. The fact that the rapidly repeated blows on *any* part of the spinal colum or chest produces this fenomenon, shows it is not a reflex, but is causd by *shock*. Electrical stimulation wil not do it. If the eye is emmetropic, it wil protrude slightly, following these same concussion blows. Severe pressure over chest and spine wil cause this change of position of the eye ball.

The *ocular reflex* that I refer to as occuring when the subject turns from east or west to north or south I first dis-

coverd while fitting lenses to a patient's eyes. I observd that a change of position as regards the points of the compass made a difference in the lenses used as a test.

The Punctometer is illustrated in Fig. 76. It was designd, I believe, by J. G. Huizinga, M.D., of Grand Rapids, Mich., but the principle of the apparatus I think was first enunciated by Dr. Tschering in his works on "Physiological Optics" in 1878.

It is portable and works on a principle similar to the Ofthalmo-Axonometer.

Fig. 76 illustrates the various targets that go with it. The reading target is really the best for illustrating this ocular reflex, but the targets with lines wil in many cases demonstrate the elicitation of the MM VR in a very remarkable manner.

The tecnic for using the Punctometer is the same as described for the Ofthalmo-Axonometer.

Fig. 77. The Galton Whistle. This instrument is used for testing the acuteness of hearing and can be employd to demonstrate the elicitation of the MM VR.

An Aural Reflex

This aural reflex is elicited in the same manner as the ocular reflex referd to, and obtains for about the same length of time.

It is demonstrated by the fact that the listener can hear with greater acuteness during the elicitation of the reflex.

The Galton whistle is shown in Fig. 77. The gradations on this instrument indicate in .1 mm the height of the vibrating colum of air. The calculated vibrations range up to 85,000 a second.

While the patient is facing east or west with back to operator, sound the whistle and observ the lowest vibration she can hear at a given distance.

Now turn her to face exactly north or south and if she has a normal MM VR, she wil be able to hear a lower vibration than when facing east or west.

Other Energies Than the MM That Wil Elicit the VR

While in Bio-Dynamo-Chromatic work we ar particularly interested in the MM, yet it is interesting to know what some other energies wil do. This wil make it clear why the B-D-C tecnic has to be so exact.

In eliciting the VR by any other energy than by the magnetic meridian, the subject must face east or west, as before explaind.

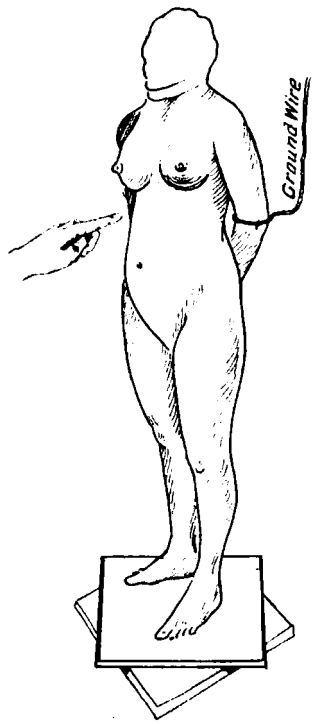


Fig. 78. Showing how the VR can be elicited by pointing the index finger toward the epigastric region. Notis that subject is grounded and in a subdued light.

The subject should also be grounded and in a subdued light. When one fully realizes that light is, itself, a very potent energy, they wil realize how light energy would interfere with other energies in eliciting the VR.

Energy From the Hand

Energy from the finger pointing at the epigastric region of the subject, as shown in Fig. 28 wil elicit the VR.

Pointing the thum at the epigastric region, as shown in Fig 79, wil also elicit the VR.

Energy From a Magnet

If a magnet has either pole directed toward the epigastric region, as shown in Fig. 80, it wil elicit the VR.

Fig. 79. Showing how to point the thum toward the epigastric region as shown in Fig. 78.

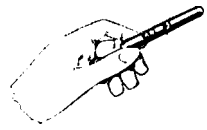


Fig. 80. Showing how to point an encased magnet toward the epigastric region as shown in Fig. 78.

To giv an idea as to the sensitivness of the human organism to magnetic energy, I might state that a fine needle wel magnetized and fastend into the end of a piece of wood wil elicit the VR if held so the end is pointing toward the body not farther than six inches distant. (Tecnic as in Fig. 78.)

I hav been told that about fifty years ago a surgeon, while trying to locate a piece of iron in his patient's stomac by means of a magnetic needle, observd that the magnetic flux changed the resonance of that organ.

Individuals working with powerful giant magnets hav often remarkt how their "face flusht" when they first came within the field of a powerful magnet.

Energy from Light Waves

Fig. 81 shows an individual in a dark room with a beam of sunlight admitted thru a hole. If this beam of

light wer so small that it coverd only the individual's epigastric region, it would elicit the VR.

Blind persons hav often notist what they described as a "stimulating sensation" when a bright light was suddenly shed upon their body.

Energy from Colors

I hav alredy said that if a helthy person, that is one with a normal rate and mode of motion, is grounded and

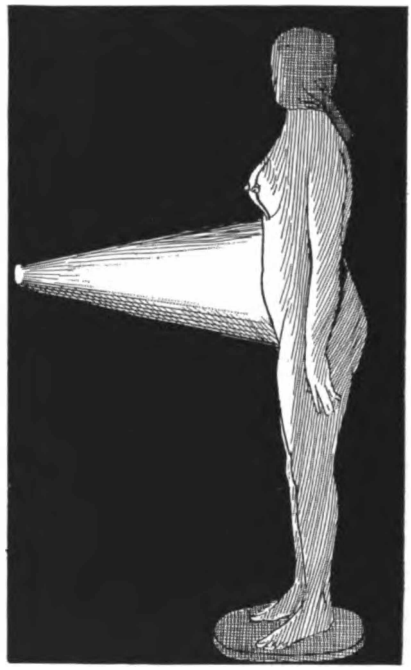


Fig. 81. Showing how a beam of light shed on the naked body, directed toward the epigastric region wil elicit the VR. Subject must be in a dark room.

faces from either east or west to either north or south, the VR wil be elicited.

If a dim, dark-room-ruby light is shed upon this individual's bare epigastric region while facing north or south, this MM VR wil be immediately dissipated, Fig. 20.

As soon as this radiant ruby light is extinguisht, the MM VR wil immediately return.

(*When using colord light for B-D-C diagnosis, care must be exercized that the radiations ar not too bright. When used according to directions, my Chromatic Screens giv the proper radiation.*)

Energy from Sound Waves

If a regular sound vibration, such as is given from a tuning fork, Fig. 82, is made near the epigastric region, the VR wil be elicited. (Tecnic as in Fig. 78.)

Fig. 82. Showing how a tuning fork may be used as in Fig. 78 to elicit the VR.

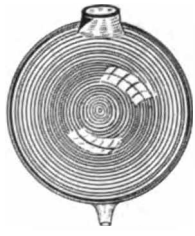


Fig. 83. Helmholtz Resonator

Fig. 85. Quincke's Acoustic Tube.

Fig. 83 shows a Helmholtz Resonator. If such a resonator is placed just in front of the epigastric region and then sounded, it will elicit the VR. (Tecnic as in Fig. 78.)

(This fenomenon of "sound stimulation" was described many years ago by a scientist working with tuning forks and resonators.)

Fig. 84 shows a Quincke's Acoustic Tube. If this is blown just in front of the epigastric region, the VR wil be elicited. (Tecnic as in Fig. 78.)

Fig. 85 shows a Graduated Pitch Pipe. By turning the indicator, the pitch of this pipe is varied. A very remarkable fact regarding sound energy effecting the VR can be demonstrated by means of this pipe. With some individuals one pitch wil elicit the VR very rapidly while in others it wil not. By changing the pitch, the VR can be elicited in any person by means of this Pitch Pipe being blown just in front of the episgastric region. (Tecnic as in Fig. 78.)

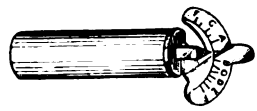


Fig. 85. Graduated Pitch Pipe.

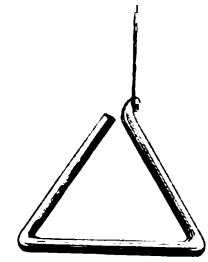


Fig. 86. Musical Triangle.

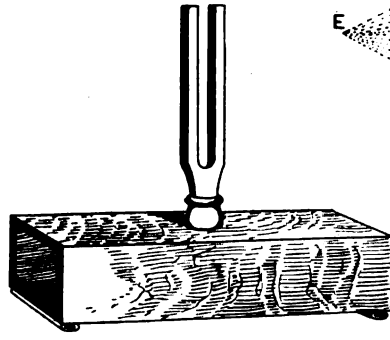


Fig. 87. Tuning Fork on Resonator.

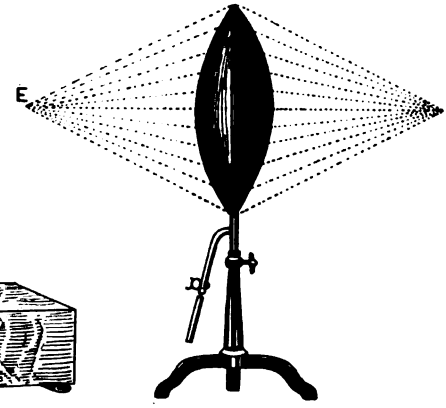


Fig. 88. Sound Lens.

Fig. 86 shows a nickeld steel Triangle such as is used in band music. If this is held by a cord and sounded by means of a piece of metal just in front of the epigastric region, it wil not elicit the VR until it is turnd in just the right position, when it wil elicit the VR almost instantly. (Tecnic as in Fig. 78.)

Fig. 87 shows a Tuning Fork fastend on a wooden resonator. If this is set on a table and sounded directly in front of the epigastric region, it wil not elicit the VR unless it is turnd in just the right position, when it wil almost instantly elicit the VR. (Tecnic as in Fig. 78.)

Fig. 88 shows a Sound Lens. It has an India rubber capsule and it should be inflated preferably with carbonic acid gas. If a loud-sounding watch or a small clock is placed at a certain position, designated by E, and the lens is held in the correct position in front of the epigastric region, it wil elicit the VR when the distance from the epigastric region equals the distance between E and the capsule. (Tecnic as in Fig. 78.)

Fig. 89 shows the correct way to direct energy from the finger.

Fig. 89. Showing the correct manner of placing the finger in directing energy.

Fig. 90. Showing the wrong manner of pointing at the epigastric region to elicit the VR. Fig. 89 shows the correct way.

Fig. 90 shows the wrong way to direct energy from the fingers or hand.

Fig. 91 shows and explains a very unique method of demonstrating the elicitation of the VR.

A Practical Demonstration of the Elicitation of the Sympathetic-Vagal Reflex. Stretching and Yawning

We all "stretch." All animals, especially warm-blooded animals, stretch. When I say "stretch" I refer to the extension of muscles, as in yawning.

Did you ever think what this does? Some tel us it is an involuntary act to rid the muscles of carbon dioxid gas; but it appears to be a stimulation of the vagus thru the cervical ganglia during the extension of the neck.

The stimulating effect of stretching and yawning appears to be a natural method of eliciting the sympathetic-vagal reflex.

Stretching seems to stimulate the sympathetic system, and for that reason many devices hav been invented to stretch the body. Hanging by the hands from a horizontal

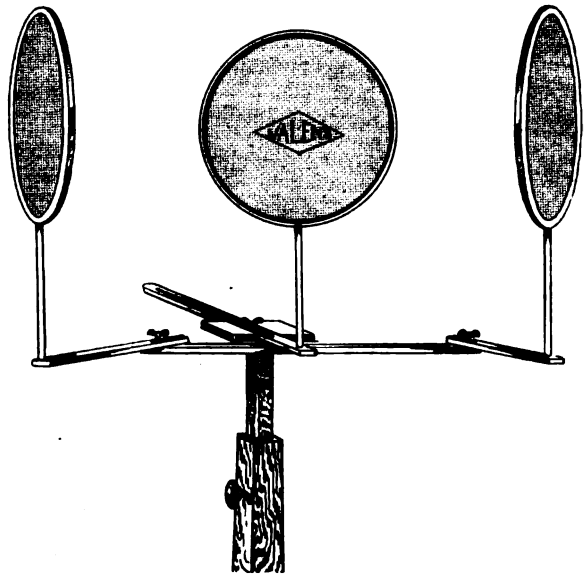


Fig. 91. Showing an echo device for demonstrating the elicitation of the MM VR. The subject stands close to the pedestal and the tambors ar so placed that when one is vibrated the echo follows around and the tension of the naked body is vividly demonstrated by the change of pitch of the echo.

bar, lifting weights by the feet, and jumping, all tend to stretch the muscles; but *voluntarily* extending the neck seems to produce the most stimulation and is a recognized exercize for various hart affections.

(*See Part Four, Lecture II.*)

Because of the fact that the VR wil be elicited if a person extends the neck, the operator has been cautiond to hav the patient look downward or straight ahed during the B-D-C diagnosis.

Can the X-Ray Demonstrate the MM VR?

This question is often askt. Let me ask what the x-ray is. In broad terms, it is a rate and mode of motion. What effect has one rate and mode of motion on another rate and mode of motion? One changes the other. What effect then must the x-ray hav on the animal organism?

The x-ray wil elicit the VR. Consequently if the x-ray wil elicit the VR, it cannot demonstrate the VR elicited by the magnetic meridian (the MM VR) because *if two different energies wil produce the same result separately, then when used simultaneously they cannot be used to detect each other.*

If the x-ray ever demonstrates a reflex, it cannot be the MM VR. It is the X-ray VR.

Observ wel the difference. One is the VR elicited by the *MM* while the other is the VR elicited by the *x-ray*.

Can Radium Energy Demonstrate the MM VR?

Energy from radium or radio-activ substances is a rate and mode of motion. Therefore the anser would be the same as for the x-ray.

Radium or radio-activ substances wil elicit the VR.

Radium bromide, pure, 12X, which means a radio-activity of four million, wil elicit the VR. The Radium-Bromide-VR is dissipated by the ruby light (*A*—Chromatic Screen). Homeopathically speaking, this is the most recent and up-to-date method of "proving" an energy for therapeutic purposes. It is the most recent method of demonstrating the soundness of the *Law of Similars*. I feel sure that I was the first one to ever use this method of "proving" tho some hav copied my reports. (Some hav twisted my experiments out of all semblance of scientific work.)

Caution: If anyone ever says he can demonstrate this or that reflex by an x-ray shadow on a screen, remember what has been said about energy. Many so-cald "reflexes"

ar simply *shock reactions*. If one is hit a severe blow in the chest the hart wil, of course, change position, but it is not a reflex—it is a *reaction to shock*.

How to Train the Ear for B-D-C Work

Fig. 11 shows how to use a sounding board over a solid substance and study the change of pitch as it is brot nearer to or farther away from the table top. Fig. 13 shows how to use a wooden horn to train the ear.

Fig. 14 shows how an organ pipe can be used to train the ear.

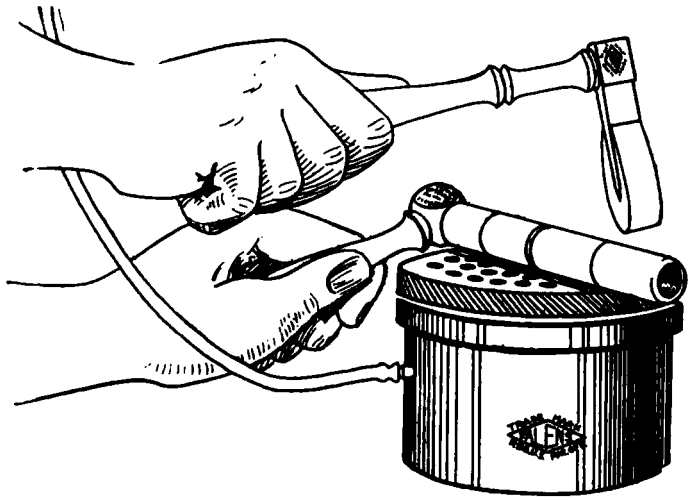


Fig. 92. Showing the use of Valens Practis Drum in practising with the Valens Vagotonometer. Other end of rubber tube is held in operator's mouth and the change in density of drum-hed is alterd at will.

Fig. 16 shows how a pasteboard box can be used to train the ear.

Fig. 19 shows my perfected Practis Drum. This drum is the best of all devices to train the ear.

Fig. 43 shows how glasses of water can be used to do the same thing as Fig. 11 wil do.

Figs. 35 and 42 show how the Practis Drum is used to air-colum percuss over.

Fig. 92 shows how to use the Practis Drum with the Valens Vagotonometer to cultivate the ear.

Figs. 93 and 101 show how to practis with the Practis Drum and Valens Organotonometer.

Fig. 94 shows how to use the Practis Drum in connection with Valens Densitonometer in drilling. The Super-Densitonometer can be used in same manner.

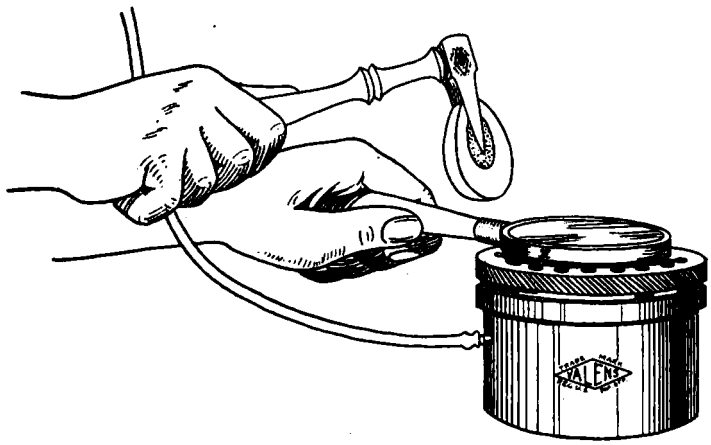


Fig. 93. Showing the use of Valens Practis Drum in practising with Valens Organotonometer.

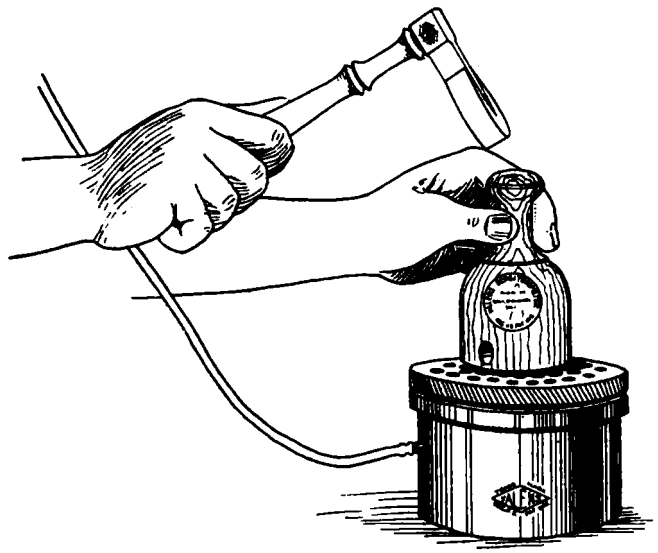


Fig. 94. Showing the use of Valens Practis-Drum in practising with Valens Densitonometer.

Fig. 95 shows a method of demonstrating the change of pitch with a change of tension better than any other. The tone of the Diagnostofone changes marvelously when the tension within the drum is changed.

Practis! *Practis!!* PRACTIS!!! Soon you wil know why for it is all easy after a few days' practis.

Fig. 95. Showing how to use the Practis Drum with the Valens Diagnostofone. A regular rubber bulb is attacht to the mouth piece and tension within drum is alterd by pressing on the bulb.

CONDUCTION OF ENERGY

MANNER OF EMPLOYING THE ENERGY CONDUCTOR

Energy conductors hav been discust. They ar illustrated in Figs. 2, 3, 4, 5, 6, 7, 8. Altho I hav used all kinds, the one illustrated in Fig. 8 is my latest and appears to be the best style. The manner of using it is illustrated in Figs. 96, 97, 98, 99 and 100.

Energy can be conducted from any part of the body, except over the epigastric region, for *Auto-Excitation*.

Energy can be taken from any part of the body of a patient and conducted to a subject in *Subject-Excitation*.

Patient or subject, or both together, must be grounded and preferably to aluminum.

The energy conductor shown in Fig. 8 is the one I now use.

One terminal with the disc on it in the energy conductor shown in Fig. 8 is the receiving, or patient terminal; while the other or pointed one, is the dispersing, or subject terminal.

AUTO-EXCITATION

When the patient herself is used to demonstrate the elicitation of the VR from some part of her own body, as illustrated in Figs. 96, 97, 98, it is cald *Auto-Excitation*.

If the patient is in bed, or is too weak to stand, or the part examind is the stomac or parts near the solar plexus, another person is used. *Subject-Excitation*. (Figs. 99 and 100.)

SUBJECT-EXCITATION

Fig. 99 shows how a subject is used as an indicator.
Fig. 100 shows patient behind a screen.

TECNIC

In employing any energy except the MM to elicit the VR, the person must always face east or west. (The MM being an energy, one could not tel which energy acted on the person if she faced north or south.)

With the person stript to the waist, grounded, and in a subdued light, and facing *east or west,* get the *Working Line.*

Then direct the energy from the lesion or part to be examind to the epigastric region, as shown in Figs. 96, 97, 98, 99 and 100.

Fig. 96. Showing the tecnic for auto-excitation. The patient is holding receiving terminal as wel as dispersing terminal. Notis how the dispersing terminal is directed toward the epigastric region. Notis position of patient's hed. Notis that she is facing east or west and is grounded. Notis the turntable she stands on. This style of turntable can be made higher or lower, by having the legs on it longer or shorter, to suit the operator.

This energy wil elicit the VR and is demonstrated by the fact that now the *Reflex Line* is obtaind.

Radiate the color on *subject* as shown in Figs. 99 and 100.

The radiant color that wil dissipate this VR indicates the nature of the lesion. (Patient or subject or both facing east or west all the time.)

Carry out this tecnic with the *patient* in *Auto-Excitation.*

Fig. 97. Showing Valens Energy Conductor held in an x-ray tube holder in Auto-Excitation.

Carry out this tecnic with the *subject* in *Subject-Excitation.*

In taking the energy from any lesion or part of the body being examind, the patient-terminal, or receiving-terminal, must be placed over the site that is being diagnosed.

To begin with, let the terminal come in near contact with the skin. Then move it farther and farther away until the energy from the location fails to elicit the VR.

In this manner, we ar not only able to differentiate the nature of the energy given off, but we ar able to determin the activity of the pathological process.

The proximity to which we must come to the skin in taking the energy, wil often tel us whether the organ under

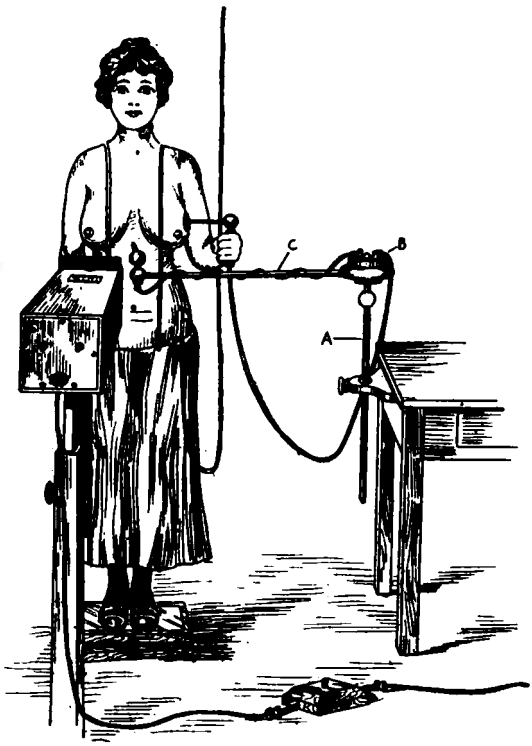


Fig. 98. Showing Valens Energy Conductor bilt on a table for offis use. This is a sketch of the author's Energy-Conducting apparatus and table with energy mesure—Bio-Dynameter or Bio-Dynamo-Meter *B*. Upright rod *A* can be raisd or lowerd. *C* is the conducting wire.

examination is normal or not, even tho no diseasd process is present.

The subject-terminal or dispersing-terminal should be always about three inches from the subject or patient. (See Figs. 96, 97, 98, 99 or100.)

Mesuring the Energy

As previously mentiond, the distance that the patient or receiving-terminal can be from the skin over the lesion, and stil elicit the sympathetic-vagal reflex, is an indication of the activity of the diseasd process, or indicates whether the organ being examind is normal or not. (Figs. 102 and 103.)

For example, if a tuberculous or cancerous lesion is very activ, the receiving-terminal may be from twelv to

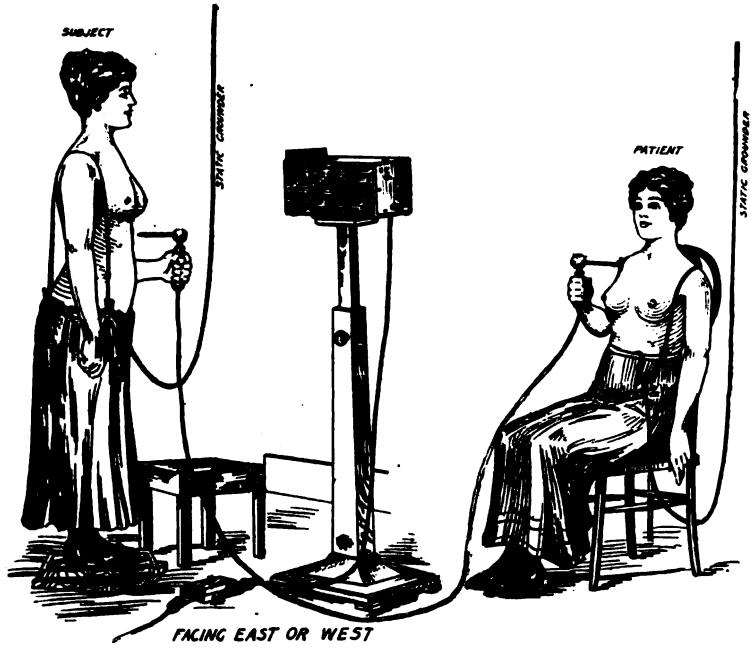


Fig. 99. Showing energy being conducted from one person to another—Subject-Excitation. Notis that the light radiates on the subject.

twenty-four inches distant from it. As the activity of the disease subsides, the terminal must be brot nearer and nearer to the skin. In this manner we ar able to gage the progress of the therapeutic mesures as wel as judge of the activity of the disease.

For mesuring this energy, I use either a specially constructed ohm meter, or energy reostat, which is simply

a resistance coil; or one can use an ordinary wooden ruler, placing one end of the ruler in contact with the skin and moving the receiving- or patient-terminal on the rule, observing just how far it is from the body when the energy becomes too feeble to elicit the VR. (Figs. 102 and 103.)

The special energy-mesuring outfit which I use, I hav named *Bio-Dynameter* or *Bio-Dynamo-Meter*, which means a mesure of energy from the living body. (Fig. 98.)

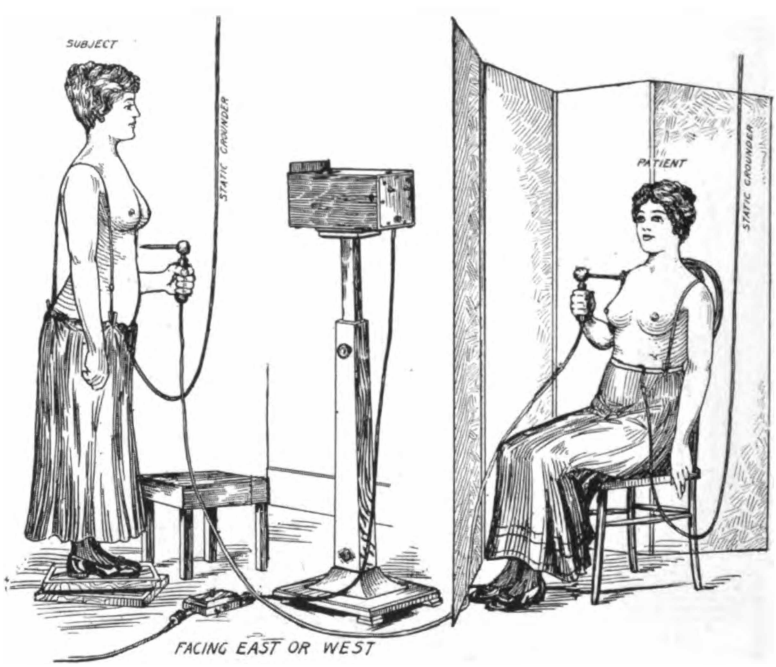


Fig. 100. Showing Subject-Excitation thru a screen or room partition. The patient can be behind a screen or in an adjoining room. Notis that the light radiates on the subject.

I hav devized all sorts of Bio-Dynamo-Meters. The first kind was a pasteboard tube around which I wound resistance wire. The next was a grafite disc, etc. Probably the all-wooden ruler to mesure the air-gap resistance, is as good as any of the complicated and expensiv outfits.

The mesuring of human energy is only relativ, no matter what form of mesure is used. Ten inches in one person

would not mean the same as ten inches in another, as each individual possesses his own caracteristic energy. (Fig. 103 shows an ohm meter used as a Bio-Dynamo-Meter.)

Fig. 101. Showing how the Practis Drum can be used to practis on to train the ear, or can be used to demonstrate the elicitation of the MM VR. As the operator turns from facing east or west to face north or south the capacity of his farynx is changed and then the tension in the drum is changed, and the vibrating colum of air changes pitch. Operator should be grounded and in a subdued light.

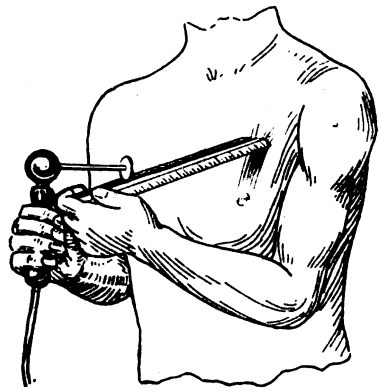


Fig. 102. Showing how an ordinary rule without any metal in it, can be groovd out and used as an energy mesure, or Bio-Dynamo-Meter. The distance that the receiving terminal can be from the lesion and stil elicit the VR, shows the activity of the lesional process—the greater the distance, the more activ it is. The reverse is also true—the nearer the terminal must be to the lesion to elicit the VR the less activ the lesional process.

(I am informd that some one has recently put on the market an "energy mesure" at a fabulous price, claiming great things for it. It is, I am told, only a cheap resistance coil or coils in a fancy box under a fancy name. Imposters ar sure to copy good work, but I hope my readers wil not be imposed upon.)

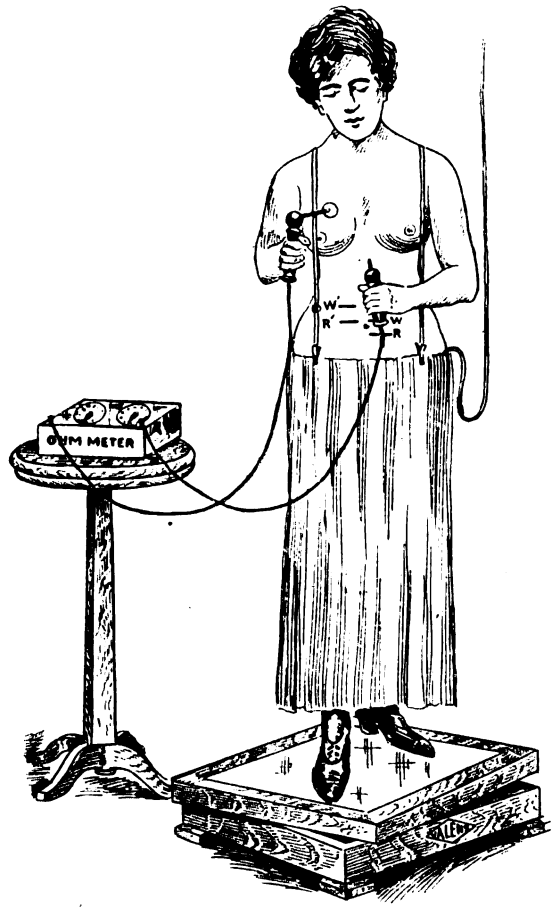


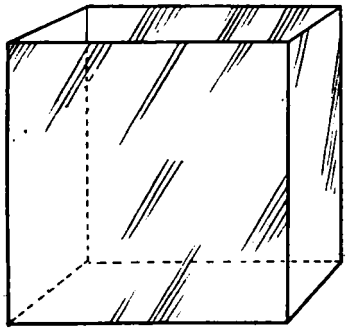
Fig. 103. Showing an Ohm Meter or resistance coils used as a Bio-Dynamo-Meter. Remember that any method of mesuring resistance for B-D-C work is only relativ, and is useful only as a gage for each individual. For example, if the energy mesure showd 80 ohms for a lesional energy to begin with and after a month's treatment showd 40, it would show great improvement, but no comparison can be made between one patient and another. The mesuring rule shown in Fig. 102 is probably as good as any expensiv Bio-Dynamo-Meter, or Ohm Meter. I hav tried many kinds and like the air-gap method best of all.

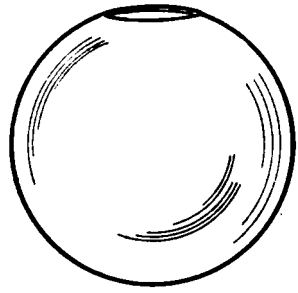
VALENS CHROMATIC SCREENS FOR VALENS ELECTRIC BIO-DYNAMO-CHROME

HOW I DEVELOPT THEM

The first color I used for Bio-Dynamo-Chromatic Diagnosis was the ruby used in my fotografic dark room. This ruby was the cloth screen with which I made my safety lamp box.

Later I used the "safety" electric light bulbs, which wer of a deep ruby, especially made for fotografic-dark-





Figs. 104 and 105. Absorption Cels used in experimental work for holding colord liquids.

room work. I could not always obtain these globes, so sercht for glass that could be used for this purpose. I was able to obtain about a hundred pieces, and they workt very wel, but had to be used with a carbon lamp no stronger than 16-candle-power. I also had "cobalt-blue" lamp bulbs for diagnostic purposes. When the war broke out, I was unable to get glass that would stand the test.

I then tried celluloid, but found that the colors wer never uniform and could not be depended upon.

I then began a long series of experiments. In glass absorption cels, as shown in Figs. 104 and 105, I placed colord liquid. Light was reflected thru these cels, so the radiant color would shine on the bared chest of the patient. By using several tubes at one time and radiating various combinations of colors on the body, I was always able to find a color or combination of colors, that would elicit the MM VR.

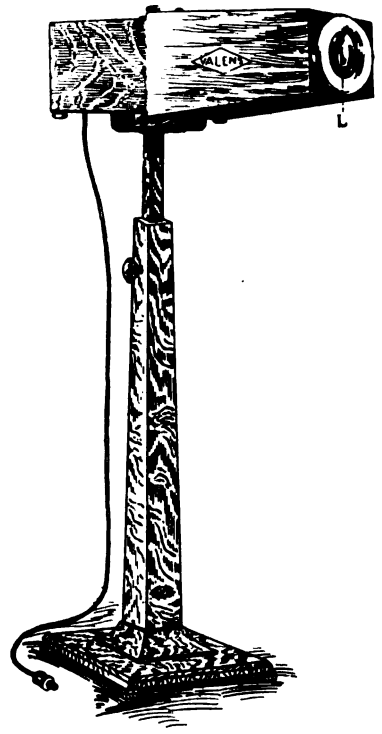


Fig. 106. Showing a projectoscope for holding several absorption cels at a time. With this apparatus I can make any color known. *L* represents the front Cel or hollow lens.

Fig. 106 shows a projectoscope I devized for holding several absorption lenses at one time. Fig. 107 shows a device for holding one absorption lens and with it I could use screens, if they wer required to make the proper radiation.

By comparing the color or colors thus employd thru a special fotospectrometer, Fig. 108, I ascertaind just what color I was employing. From this knowledge I made gelatin sheets of the correct color for the condition under examination.

In this manner I experimented with a great variety of gelatin colors and made up a large assortment.

With these pieces of gelatin placed in cardboard masks, I was able to elicit the MM VR in all abnormal conditions.

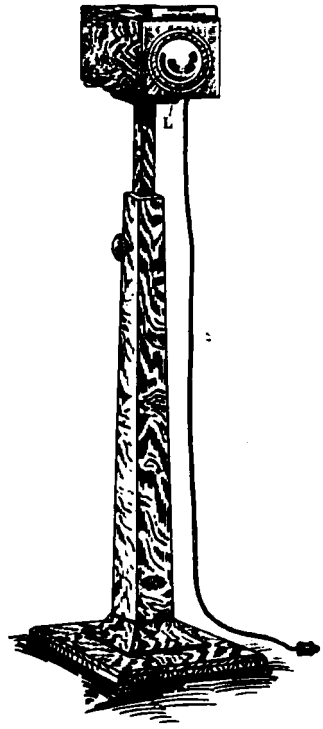


Fig. 107. Showing a simple, single Cel Projectoscope. *L* represents an absorption cel and by placing colord fabrics back of it I can make almost any color known.

I found, however, that gelatin would not stand in various climates and that the heat from the lamp would crack it. Therefore it was not practical.

I then began investigating silks and linens. I visited various places where such goods wer made and found I

could hav certain weaves made that would be suitable for the work. The greatest obstacle was to obtain the true colors. I had a limited supply of true anilin dyes that I had obtaind before the war broke out, but had used a great deal of that in making the gelatin sheets. I was able to interest some of the largest dye masters in the United States in the work, and they obtaind some true dyes and got out silks that I needed.

By using my elaborate outfit for comparing and testing colors I could see whether the color used in the dye wer correct. (Fig. 108 shows only one part of the large outfit referd to. This outfit when set up occupies a space 8 ft. x 8 ft.)

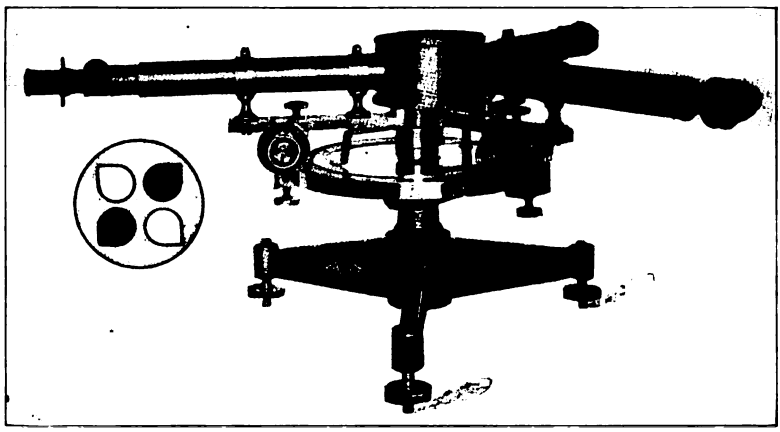


Fig. 108. Special Fotospectrometer used in studying and standardizing colors.

I hav found that I can obtain the best color for "non-actinic ruby" and "non-actinic orange" in linen. It was very difficult to get the correct blue. After a long series of experiments, I found that by passing the light thru two different fabrics of different shades, I was able to get the "complementary blue" (complementary to "non-actinic ruby") as wel as any color needed for the work. Fig. 30 shows how this is done.

The mounting of these silks and linens was another problem. I tried various designs and forms, but all had

their shortcomings, until I devized the screen with four apertures (Figs. 109 and 110) so arranged that radiant colors can be mixt, that is, one aperture is screend with silk or linen of one color, and another with another color. Thereby an effect is obtaind similar to that produced by various tints and hues. I found that a board with a specially

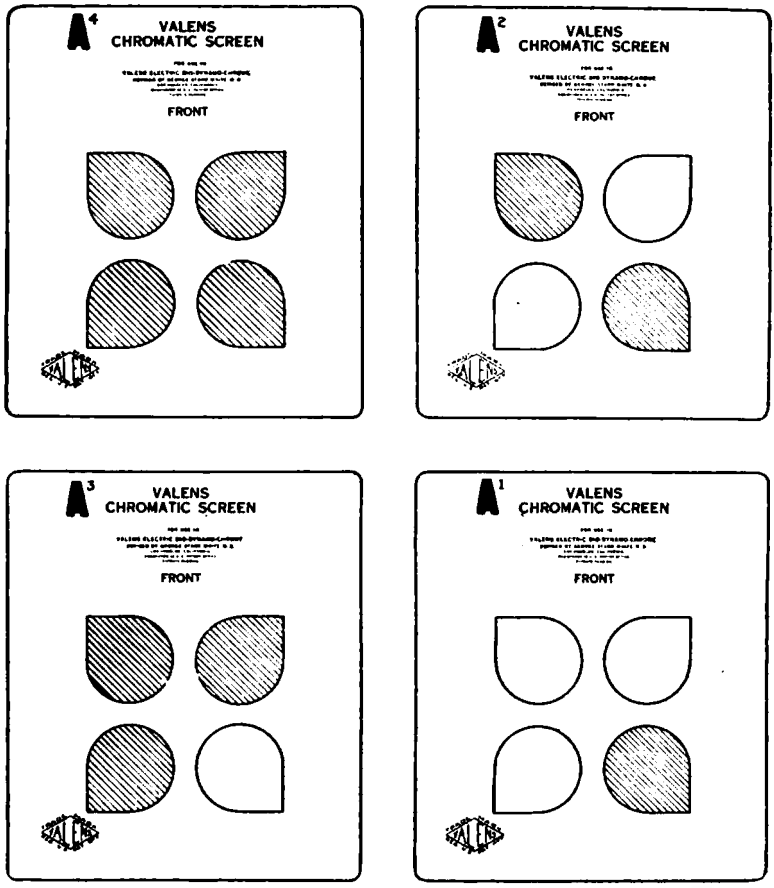


Fig. 109. Showing how each of the four openings or windows can hav a different color or tint.

calenderd surface, tecnically known as "pressboard," when glued with a specially prepared glue, would make a sheet that was almost identical with a solid fiber board.

I had dies made for stamping out these sheets, and between the sheets placed the fabric. Then in a hevy press the board and fabric ar cemented together, making a screen almost indestructible, and one that is ideal for the work.

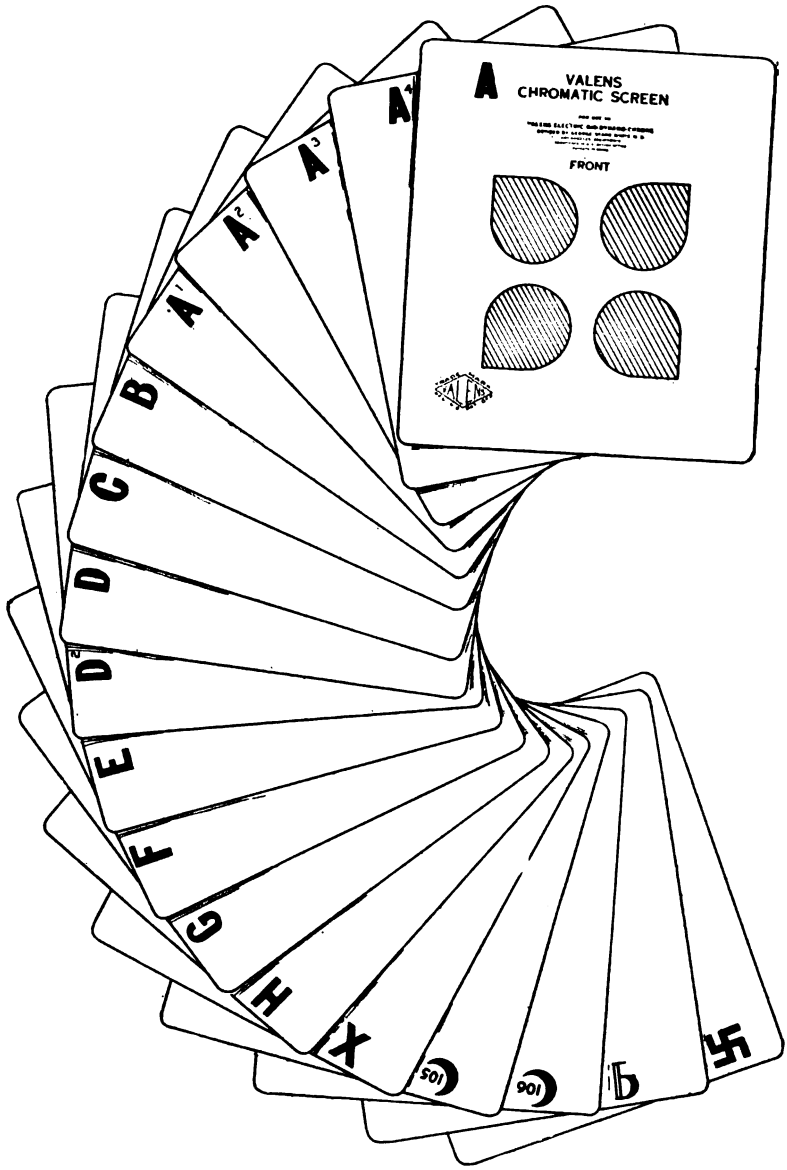


Fig. 110. Showing a regular set of Chromatic Screens.

The fabrics ar so made that each one wil giv the amount of radiant color required for its particular use when it is a definit distance in front of a reflected light from a 60-watt-tungsten lamp. It is on this basis that all Valens Chromatic Screens ar made. These screens wil not fade if kept in a dark cloth or away from the sunlight.

Designation of Valens Chromatic Screens

As the names of colors ar entirely arbitrary—one dyer calling a certain color one name and another calling it another—I hav designated my Chromatic Screens by letters and numbers. The letters indicate the use of the screen and the numbers indicate the attenuation of that color. For example, Fig. 109 shows four screens all markt *A* (which designates a certain color) but with the numbers 1, 2, 3, 4. A^4 indicates that the four windows or apertures ar of the *A* color; A^3 means that three ar of the *A* color and one is white; A^2 means that two ar of the *A* color and two ar white; A^1 means that one is of the *A* color and three ar white. In this way the color that is used for *A* is diluted the same as diluting the dye in the same proportion.

It is by these attenuated colors that I differentiate the various stages or activity of the disease being diagnosed. This is particularly useful in tuberculosis and cancer. This attenuation of colors does not seem to be of any special advantage in any other toxemias except in specific urethritis, where it differentiates between an acute and cronic condition. These diluted colors also enable one to watch the improvement from the therapeutic mesures.

In my laboratory I hav experimented with a great array of colors and combinations. I hav found that a certain color or combination of colors elicits the MM VR in *all* cases of an abnormal MM VR, whether I am able to name the abnormal condition or not.

Valens Chromatic Screens and What They Indicate

The following is a special list of Valens Chromatic Screens (Fig. 110) that I advize a pupil to start with.

(Also No. 26, No. 27, and No. 35 of the Crescent Series.)

Other Chromatic Screens can be added as the pupil becomes proficient in the work.

A is the screen made by combining "non-actinic orange" and "non-actinic ruby." It wil diagnose tuberculosis and cancer.

A^4, A^3, A^2, A^1, ar screens for ascertaining the activity of the disease—tuberculosis or cancer.

B is the "non-actinic orange" screen which is used for differentiating cancer from tuberculosis. It wil diagnose cancer or sarcoma but not tuberculosis.

C givs correct blue (complementary to *A*) of the proper radiation for diagnosing syfilis, auto-intoxication, and malaria.

D givs the correct violet ("neutral violet") radiation for diagnosing specific urethritis.

D^2 is for ascertaining the activity of the gonorrheal infection and to watch the results of the therapeutic procedure.

E givs the correct green radiation for diagnosing liver intoxications—jaundis, etc.

F givs a radiation of combined colors to differentiate malaria from syfilis.

G givs radiations from a combination of colors to diagnose influenza or grip.

H givs a radiation of a "magenta" color which diagnoses deep-seated neurotic conditions, paranoia, etc.

X givs the proper radiations for intensifying the reflex. It wil also enable one to get the "Working Line" and the "Reflex Line" in an individual if they cannot be obtaind in any other way. It is a "primer" as it wer.

It can be used with patient facing in any direction.

It can also be used in combination with other colors for eliciting the MM VR in conditions where the other screens wil not do it alone.

♋ givs the correct radiation for the average case of epilepsy.

♋ givs the correct radiation for tonsilitis.

¶ This sign indicates a screen that is used as a *dimmer*. It is of white linen and is used for dimming the light in the Bio-Dynamo-Chrome, or for putting *back* of any color screen made of transparent media, such as glass, celluloid, or gelatin.

卐 This sign indicates the screen which I call a *blinder.* It is opaque and is used to giv the apparatus a finisht appearance and to keep daylight out of it when not in use.

As fast as I am able to definitly describe certain symptoms that go with certain other colors and combinations of colors, I make a screen for it. They ar described under *Crescent Series.*

ALL THESE SILK AND LINEN SCREENS MUST BE KEPT FROM THE SUNLIGHT.

It is best to keep them in a closed box or wrapt in a dark cloth. The colors wil last a "lifetime," if handled in this manner.

CHROMATIC SCREENS FOR DESIGNATING THE ACTIVITY OF THE DISEASE

As previously mentiond the tint or attenuation of the diagnosing Chromatic Screen wil show the severity of the disease. For example, if a patient has an *A*-MM VR, we do not positivly know whether it is tuberculosis or cancer. If, however, there is no *B*-MM VR, we know that the case is tuberculosis. We then use A^4-screen and that wil giv the reflex about the same as the *A* screen.

We then try the A^3-screen and if that elicits the MM VR, we know the relation between the toxemia and the patient's resistance is about evenly balanst and that there is "a good fighting chance" for the patient to recover; but if the patient has an A^4-MM VR and not an A^3-MM VR, I consider the prognosis is very doubtful.

If the patient has an A^2-MM VR, it is a fairly incipient case.

If the patient has an A^1-MM VR, it is a very incipient case and with proper treatment the patient should be wel in a few months.

If the patient has a *B*-MM VR, the attenuated *A* screens wil designate the severity of the cancerous condition the same as if it wer tuberculosis.

If a person has a D^2-MM VR, it indicates a cronic gonorrheal condition, or that the resistance of the patient is far in advance of the toxemia.

Explanation of the Action of the Attenuated Screens

The radiation from the A^1-Chromatic Screen is an intense rate and mode of motion of its peculiar kind, and it wil interfere with an equally intense rate and mode of motion of an opposit kind.

If this radiant color of the A^1-Chromatic Screen is attenuated, that is, diluted with white, the intensity of the particular radiation of A^1-Chromatic Screen is lessend.

The more this particular color radiation is diluted, the less wil be its peculiar radiating power, and therefore the energy that it wil dissipate, or neutralize, or interfere with, must consequently be just so much attenuated or weakend.

It is on the same principle that a piece of iron weighing 100 pounds, suspended ten feet, wil strike the ground with greater force than a piece of iron weighing 10 pounds.

It would require 100 pounds to displace or neutralize 100 pounds, but only 10 pounds to displace or neutralize 10 pounds.

Directions for Using Valens Chromatic Screens

A-Screen is for diagnosing *tuberculosis* or cancer. It is made in attenuations A^4, A^3, A^2, A^1. For intermittent treatment of tuberculosis, A^4 should be used regardless of what attenuation wil elicit the MM VR. *Use A^4-Screen also for one with a normal MM VR.*

B-Screen is for *cancer* (or sarcoma), but not for tuberculosis. It is used for the treatment of cancers as wel as for differentiating cancer from tuberculosis.

C-Screen is for *syfilis,* auto-intoxication, or malaria. Use this screen for the intermittent light treatment for syfilis or auto-intoxication.

D-Screen is for *specific urethritis.* It is made also attenuated one-half, that is D^2. Screen *D* is used for treatment.

E-Screen is for *jaundis* or liver intoxications and is used for treatment of same.

F-Screen is for *malaria* and differentiates malaria from syfilis. It is used for the treatment of malaria.

G-Screen is for *influenza* (grip) and is used for treatment of same.

H-Screen is for deep-seated neurotic conditions such as brain-tumor, *paranoia,* and other progressiv deep-seated nervous conditions.

X-Screen is for *intensifying reflexes.* The tecnic for using it is to let light radiate thru it on the bare chest while the patient is facing east or west, then extinguish the light and procede as if no light had been used.

[illegible]-Screen is for *epilepsy* and should be used intermittently for treating same. It is also useful in treating some forms of anemia, especially of a neurotic type.

[illegible]-Screen is for *tonsilitis* and should be used intermittently for treating same.

The Dimmer Screen is to be used back of any transparent material used in place of fabric, such as glass, gelatin, or celluloid.

The Blinder Screen is to be kept in the box when the outfit is not in use. All other screens should be kept from daylight. They should be wrapt in a dark cloth or kept in a dark closet. If so handled, they wil last indefinitly and wil not fade.

Remember that any screen that elicits the MM I'R in a patient should be used intermittently for treating that patient.

Remember that intermittent light treatment, using the screen that elicits the MM I'R, is known as B-D-C therapy or B-D-C treatment.

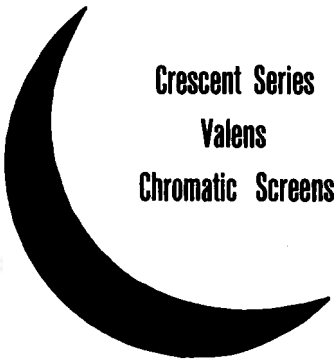
Remember that the darker the room is in which the B-D-C therapy is carried on, the greater the effect of the intermittent color.

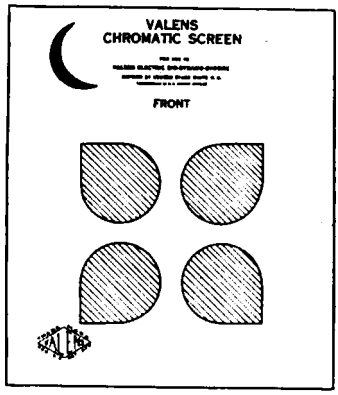
Remember that while taking the B-D-C-treatment the patient must be facing exactly north or south.

Remember that the patient must be grounded while taking the B-D-C treatments.

Remember that the effect of the intermittent color is greatly enhanst by having the chest bare while taking the B-D-C treatment.

VALENS CHROMATIC SCREENS FOR VALENS ELECTRIC BIO-DYNAMO-CHROME
(CONTINUED)





The Crescent was employd by the "ancients" as an emblem of progress—augmentation. "The new moon grows."

I hav adopted the *crescent* as a symbol of one series of my Chromatic Screens.

The Crescent Series Valens Chromatic Screens wer developt primarily for augmenting the magnetic-meridian-sympathetic-vagal reflex (MM VR) by checking or neutralizing *complications* of diseases.

My method of arriving at the proper radiation has been previously fully explaind. Suffice it to say, I found that a person suffering with tuberculosis often had also auto-intoxication, or syfilis, or some other concomitant disease. For instance, I would be able to elicit an *A*-MM VR but not as pronounst as I liked. Then by using my special color projectors (Figs. 106 and 107), and employing many colors at one time, I discoverd a mixt radiation that would greatly augment the *A*-MM VR in this particular patient. This was the beginning of my *Crescent Series of Chromatic Screens.*

You wil see by the foregoing that my diagnosis in this particular patient was tuberculosis, but the Reflex Line did not come much more than a finger's bredth below the Working Line. Therefore I concluded that there was

some mixt toxemia. It may hav been auto-intoxication, syfilis, gonorrhea, or something else.

Each of these Chromatic Screens has the *Crescent* emblem and after it a number. Up to the present I hav develop̄t several hundred of these screens. The following is a partial list of them. The *leading indications or leaders* ar here given. Anyone verst in the homeopathic system of ascertaining the "indicated remedy" wil very quickly see that when the "leader" is given, many other indications can also be added, but it would take up too much space to enumerate them here.

The leading indications as here given wil giv the student a little idea of the wide latitude of my Bio-Dynamo-Chromatic system.

I would not advize anyone to use all this list of screens until they hav wel masterd the science and tecnic of Bio-Dynamo-Chromatic Diagnosis and Therapy. When the student has once masterd the use of the screens shown in Fig. 110, then should he wish, he can ad some more of the Crescent Series.

When speaking of Bio-Dynamo-Chromatic Therapy more wil be said regarding the Crescent Series of Chromatic Screens.

"Drug Chromatic Screens"

My latest investigations in the art of developing radiant colors of a definit action, is in what might be cald *"Drug Chromatic Screens."*

These screens ar develop̄t to neutralize the action on the animal organism of a given drug. Homeopathically speaking, the symptoms that call for a certain drug, call likewise for the *"indicated screen"* as here mentiond.

The Crescent Series, Chromatic Screens ar to be used with a 60-watt tungsten lamp behind them the same as the Letter Series, Chromatic Screens.

Tecnic for Using the Crescent Series Valens Chromatic Screens

When, for example, you hav obtaind an *A*-MM VR, and the *Reflex Line* is not over a finger's bredth lower than the *Working Line,* try a screen like No. 13 which has for its leader "tuberculosis with unknown complications." If

then the Reflex Line is two fingers' bredth below the Working Line, you would know that you wer taking up or neutralizing some complicating toxemia along with the intoxication from tuberculosis.

Screen No. 1, No. 3, No. 39, No. 40, or No. 41 might intensify the MM VR, that is, send the Reflex Line down one or two fingers' bredth more than with the *A*-Screen alone.

Under the hed of B-D-C therapy it wil be explaind that the screen which givs the *maximum* reflex is the screen to use in treating the disease. In case one does not hav the Crescent Series of screens, the treatment can be carried on with the A^1 screen in a tuberculous case.

PARTIAL LIST CRESCENT SERIES
CHROMATIC SCREENS THEIR
NUMBERS AND LEADERS

1 Primary or plus colors. Tonsilitis. Tuberculosis with auto-intoxication, primarily from the biliary tract.
2 Secondary or minus colors. Auto-intoxication with anemia.
3 Primary or plus colors combined. Tuberculosis with some forms of auto-intoxication.
4 Secondary or minus colors combined. Anemia with auto-intoxication. Portal and urinary tracts affected. (Remarkable screen.)
5 Nervous dyspepsia.
6 Gonorrhea with complications.
7 Gonorrhea with complications.
8 Gonorrhea with complications.
9 Some forms of cronic indigestion with anemia and diabetes.
10 Some forms of auto-intoxication with syfilis.
11 Some forms of indigestion. Anemia with diabetes.
12 Anemia with auto-intoxication or syfilis.
13 Tuberculosis with unknown complications.
14 Some forms of anemia.
15 Anemia with cronic dyspepsia—hevily coated tung.
16 Anemia with hepatic disorders.
17 Anemia with tyfoid symptoms. Neurotic cases.
18 Some nefritic conditions.
19 Auto-intoxication with aciduria. Hepatic.
20 Anemia—malnutrition with acid stomac.
21 Anemia—malnutrition with acid stomac.
22 Anemia with alkali stomac.
23 Anemia with alkali stomac. Some drug intoxications.
24 Some forms of anemia with incipient tuberculosis.
25 Auto-intoxication with pancreas apparently at fault.
26 Auto-intoxication with nicotin poisoning.
27 Auto-intoxication with nicotin poisoning.
28 Gonorrhea with complications.
29 Stomac—acid, probably ulcer.
30 Auto-intoxication or syfilis with complications.
31 Gonorrhea with complications.
32 Neurosis with affection of urinary tract.

33 Neurosis with affection of urinary tract. Gonorrhea complications.
34 Hydatid cyst and other hepatic disorders.
35 Auto-intoxication caused by alcohol.
36 Hepatic disorders and hydatid cyst.
37 Neurosis—highly sext, nocturnals
38 Gonorrhea with complications.
39 Tuberculosis or cancer with complications.
40 Tuberculosis or cancer with complications.
41 Tuberculosis or cancer with complications.
42 Carcinoma with complications.
43 Some gonorrheal cases.
44 Some forms of anemia and incipient tuberculosis.
45 Debility with poor resistance; some cancer complications.
46 Some nefritic and adrenal conditions.
47 Auto-intoxication with lumbar weakness.
48 Auto-intoxication with gall-bladder complications.
49 Auto-intoxication with hepatic trouble; backake; eczema.
50 Auto-intoxication with hepatic complications; derangement of internal secretions. Complicated conditions.
51 Debility; tired-out feeling—need stimulants; some carcinomatous conditions.
52 Auto-intoxication and intestinal indigestion.
53 Debilitated condition; tired feeling; some tuberculous conditions.
54 Debility with melancolia.
55 Debility with melancolia.
56 Debility with melancolia.
57 Anemia with hepatic complications.
58 Melancolia.
59 Auto-intoxication with hepatic derangement.
60 Auto-intoxication with pancreatic derangement.
61 Auto-intoxication.
62 Debility with urinary symptoms; tired-out feeling.
63 Mental stimulant for finer natures.
64 Auto-intoxication.
65 General recuperation.
66 Cancer or tuberculosis with syfilis or auto-intoxication; mental stimulant.
67 Auto-intoxication; sedativ.

68 General stimulant; neurosis; defness.
69 Neurosis; stimulant.
70 Neurosis; stimulant.
71 Anemia; some forms of tuberculosis with complications.
72 Auto-intoxication; syfilis with complications.
73 Auto-intoxication with hepatic derangement.
74 Hepatic derangements.
75 Kidneys and urinary tract; tuberculosis with gonorrhea.
76 Kidneys and urinary tract.
77 Some forms of anemia.
78 Some forms of anemia with excitability.
79 Some forms of anemia with auto-intoxication.
80 Some forms of anemia with auto-intoxication.
81 Some forms of nefritic auto-intoxication.
82 Some forms of liver auto-intoxication.
83 Derangement of internal secretions.
84 Derangement of internal secretions; tuberculosis or cancer with some forms of auto-intoxication.
85 Hepatic and nefritic intoxication.
86 Pancreatic intoxications.
87 Derangement of internal secretions.
88 Derangement of digestiv system.
89 Auto-intoxication.
90 Auto-intoxication.
91 Gastric conditions.
92 Ovarian or testicular derangement; anemia.
93 Gonorrhea with some forms of auto-intoxication.
94 Anemia; tuberculosis with complications.
95 Auto-intoxication from drugs.
96 Auto-intoxication with cancer; some pelvic conditions.
97 Auto-intoxication from drugs.
98 Auto-intoxication; urinary tract.
99 Cancer with complications; some drug intoxications.
100 Some drug intoxications; anemia.
101 Anemia; leukemia.
102 Hepatic auto-intoxication; some drug intoxications.
103 Anemia.
104 Anemia; some drug intoxications; seudo-leukemia.
105 Epilepsy; some forms of anemia.
106 Tonsilitis.
107 Drug auto-intoxication.

108 Gonorrhea with some forms of auto-intoxication.
109 Auto-intoxication; syfilis with complications.
110 Auto-intoxication; syfilis with complications.
111 Anemia with complications from urinary tract.
112 Hepatic conditions.
113 Drug intoxications; some gastric conditions.
114 Gonorrhea with complications, especially syfilitic complications.
115 Liver complications with neurosis.
116 Tuberculosis with syfilis or auto-intoxication; gonorrhea with complications.
117 Auto-intoxication with hepatic complications.
118 Mental stimulant.
119 Drug intoxication.
120 Mental stimulant.
121 Auto-intoxication; complications from urinary tract.
122 Auto-intoxication with hepatic and nefritic complications.
123 Cancer or tuberculosis with some forms of auto-intoxication, generally with affection of the urinary tract.
124 Cancer or tuberculosis with some forms of auto-intoxication, generally with derangements of the colon.
125 Cancer or tuberculosis with auto-intoxication, generally with affection of hepatic system.
126 Belladonna, indications for; hot, red skin; vascular system.
127 Aconite, indications for; restlessness, acute conditions.
128 Bryonia, indications for; worse on motion.
129 Rhus Tox, indications for; better on motion.
130 Nux Vomica, indications for; thin, nervous, craves stimulants.
131 Kidneys and urinary tract—Urethritis.
132 Urinary tract; especially in young girls; Pulsatilla temperament.
133 Urinary tract; affections of supra-renals; mild temperaments.
134 Drug intoxication; auto-intoxication; digestiv tract.
135 Liver and pancreas; internal secretions.
136 Mental symptoms—excitable, quick temperd, shuns liquids.

137 Syfilis; auto-intoxication; supra-renals.
138 Pulsatilla, indications for; melancolia with fear.
139 Anacardium, indications for; plugd-up feeling.
140 Sulfur, indications for; hair dry, dislikes liquids, skin burns.
141 Hepatic derangements from drugs.
142 Hepatic derangements with stif joints; reumatic.
143 Argentum nitricum, indications for; hoarseness, starchy expectoration.
144 Gelsemium, indications for; weakness and trembling.
145 Arsenicum album, indications for; restlessness, fear of being alone.
146 Ignatia, indications for; emotional, moody, glum.
147 Kali carbonicum, indications for; very irritable, wants company.
148 Lachesis, indications for; amativ, jelous, sexually disturbd.
149 Stramonium, indications for; must have light and company, kaleidoscopic mind.
150 Gonorrheal intoxications of long standing.

VALENS ELECTRIC BIO-DYNAMO-CHROME

(Bios, life; dynamis, force; chroma, color)

The Valens Electric Bio-Dynamo-Chrome (B-D-C), shown in Figs. 111, 113, 114, 115, etc., is the electric light box which I devized for my Chromatic Screens. This device is elegantly made of quarterd oak, natural finish, and fitted up with specially made fixtures thruout.

A special aluminum reflector has been made for this Electric Bio-Dynamo-Chrome for throwing the light in proper radiations against the Chromatic Screen. The distance of the lamp bulb from the screen is accurately gaged.

The lamp used is a 60-watt tungsten, placed three and one-half inches from the screen.

The special thermostatic make-and-break device in the back of the box is so made that the adjusting screw for

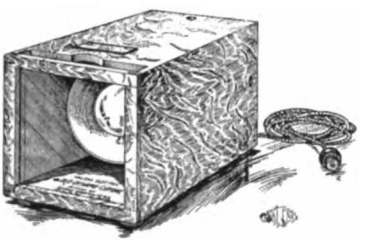


Fig. 111. Showing Valens Electric Bio-Dynamo-Chrome redy to be attacht to electric light fixture, 110 volt, A.C. or D.C.

regulating the intermittence of the light can be gotten at thru a hole in the box without removing anything from the box.

On the under side of the box is a metal screw-plate with threds cut in it to fit the ordinary camera tripod, as shown in Fig. 114. If one wishes to use a pedestal (which is far better than a tripod), as shown in Figs. 112 and 115, a double-end screw can be used in a *pedestal pin*, or post, as shown in Fig. 113. This prevents the box from falling off the pedestal and allows it to be easily turnd.

This box is provided with four wooden legs or feet, so it can be set on any table and at the same time allow air to circulate under it. This is very important.

Several vent-holes ar made in this box so as to keep the thermostatic make and break device from becoming

over-heated, as wel as to prevent too much heat from accumulating about the screen.

The front of the box is so made that the Chromatic Screens can be easily put in and taken out and stil leave a large air space between the screen and the box. This is so arranged that the heat from the lamp wil not affect the silks used in the Chromatic Screens, provided that the light is not on stedily for over five minutes at a time.

Fig. 114 shows the back end of the Valens Electric Bio-Dynamo-Chrome. *A* and *B* ar the switches operating these

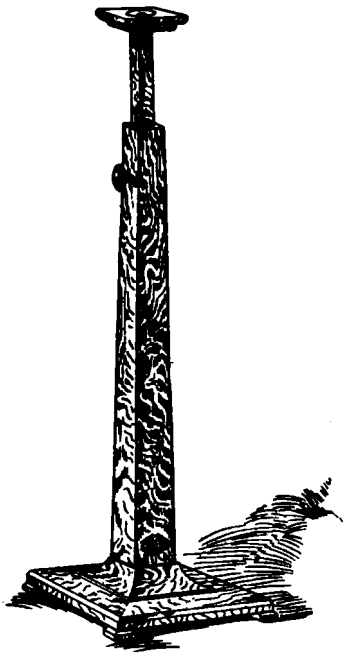


Fig. 112. Valens Adjustable Pedestal for B-D-C as wel as for many other uses in an offis.

outfits. When plunger-switch *A* is out and *B* is in, a constant light is on, and the apparatus can be used thru any form of outside mecanical interrupter, such as the Valens Metronomic Interrupter or a motor interrupter. When plunger-switch *A* is in and *B* is out, the current passes thru the specially made thermostatic interrupter, which is used for giving Bio-Dynamo-Chromatic Therapy (intermittent light treatment.)

Fig. 113 shows the under part of the Valens Electric Bio-Dynamo-Chrome and shows the removable post or pin (*pedestal pin*) that can be screwd into the plate on the under side of this Bio-Dynamo-Chrome for holding it on the pedestal.

It wil be notist that there ar several ventilation holes on the under side of the Bio-Dynamo-Chrome. Figs. 111 and 114 show that there is a permanent ventilation thru

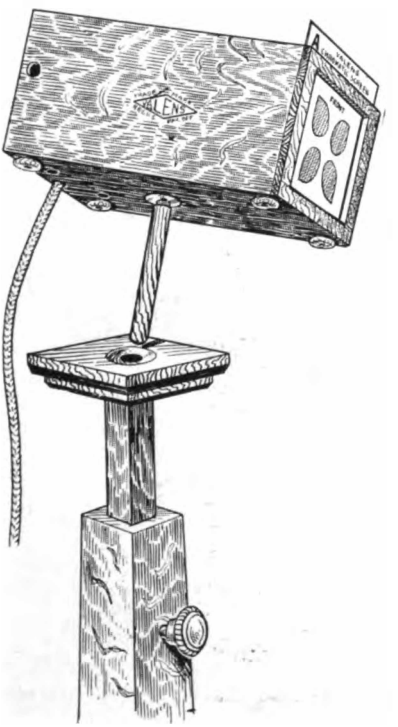


Fig. 113. Showing under part of Valens Electric Bio-Dynamo-Chrome with Pedestal Pin in place. Notis the ventilating holes on under side and also feet to stand the B-D-C on a table.

the top of the Bio-Dynamo-Chrome just back of the screen. It wil also be notist by referring to the mortise-and-tenon front of the Bio-Dynamo-Chrome in Fig. 111 that a special slot is made for putting the Chromatic Screen into. This slot holds the screen in its proper position so it cannot tilt

forward or backward. This keeps the screen at a definit distance from the lamp and allows the ventilation that is needed. When used in this manner the screen wil last indefinitly for diagnosis and B-D-C therapy.

The distance between the 60-watt-lamp bulb and the screen is 3½ inches. (If the distance is between 2½ and 3½ inches, a 40-watt tungsten lamp *must* be used, as a 60-watt would be too strong. This could only happen in older styles of B-D-C's.)

Valens Chromatic Screens cannot be used if the distance is less than 2½ inches between the lamp globe and the screen, because the required candle-power lamp cannot be employd without injuring the screen. It is for that rea-

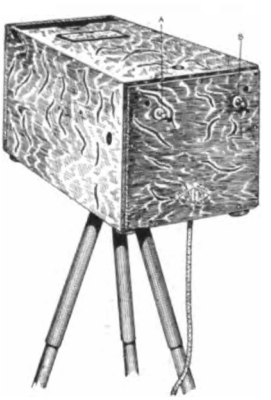


Fig. 114. Showing Valens-Bio-Dynamo-Chrome on a camera tripod. Notis the switches *A* and *B* in back of B-D-C.

son that the users of these screens must understand just how the holder should be made and ventilated if they make their own holder.

Valens Electric Bio-Dynamo-Chromes ar furnisht to physicians at moderate cost in order that they may use the correct device to get the correct results from the Chromatic Screens. I had to use a standard of illumination before getting out the Chromtic Screens, and I found that the 60-watt-tungsten lamp placed 3½ inches back of the screen gave the correct radiation without heating the screen, provided the ventilation wer correct and the outfit used as directed.

By using the detachable post (Pedestal Pin), illustrated in Fig. 113, these Electric Bio-Dynamo-Chromes can be attacht to any kind of a frame that the physician might want to attach to his oxygen-vapor generator, or to a bracket in any part of the dark room. There must be a free air circulation in Valens Electric Bio-Dynamo-Chromes, and for that reason a foot is put on each corner.

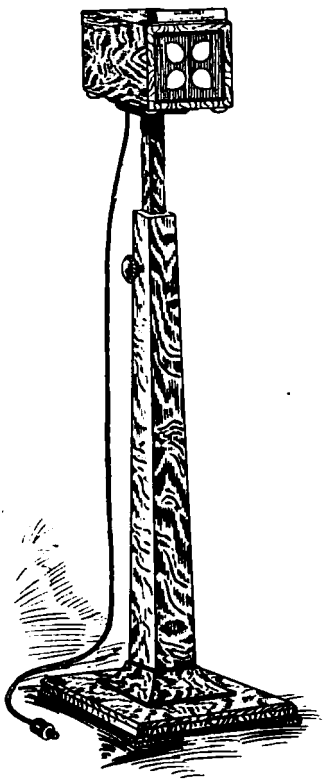


Fig. 115. Valens Bio-Dynamo-Chrome on a Valens adjustable pedestal.

NOTIS: *Valens Electric B-D-C is not made for constant illumination. It is not made for chromatic therapy, but for B-D-C therapy and for B-D-C diagnosis.*

Directions for Operating Valens Electric Bio-Dynamo-Chrome (Style E)

The lamp used in this apparatus is a 60-watt tungsten.

This outfit is made to be used with the Valens Chromatic screens. If glass is used, place one of the Valens Dimmers back of the glass. The glass can be 6 inches square.

The distance from the lamp to the back of the screen is correct for the material used in the screens (3½ inches), and the radiant light given off from the screens is correct with this distance from the lamp.

When both plunger switches ar out, all current is off the device.

When both plunger switches ar in, a constant light is given.

When the *right* plunger switch is *in*, and the left one is out, a stedy light is given.

When the *left* plunger switch is *in* and the right one is out, *intermittent* light is given, after waiting about two minutes for the thermic interrupter to heat up. (See Fig. 114.)

The intervals of intermittence of this light should be so adjusted that the light is on as long as it is off. To adjust this interval, use a small screwdriver thru the hole in the box that is opposit the large adjusting screw. It wil be one of the side holes or the top hole at the back of the box (not those on the back lid).

As this interrupter is a thermic interrupter, hot or cold wether wil affect it a little. It wil also be affected by use, and in time it wil wear out. This is the only part of the apparatus that wil not last for years. It is easy to put in a new interrupter, as I hav standardized them and hav them made up in quantity. They ar made especially for this device. As the wires ar all put on by wire terminals, it is an easy matter to put in a new interrupter.

All the inside workings of the box ar removed when the back is taken off.

The ventilation of this apparatus is made correct. It wil be notist that the top of the screen cannot hit the back of the opening. This allows a good circulation of air back of the fabric. (The Chromatic Screens require a space six inches square.)

The screw-plate on the under part of Valens Bio-Dynamo-Chrome is for attaching the *pedestal pin* or for attaching to a camera tripod. (Figs. 113 and 114.)

Home-made B-D-C Outfits

From the descriptions and illustrations given, a first-class cabinet maker could make almost any of the outfit. An expert electrician should be able to equip the electrical part.

If the physician does not want to bother with the making of the outfits, I am prepard to furnish any of the *Valens Specialties*.

I hav been obliged to personally devize all the outfits that I use for the work.

"Valens"—What it Signifies

To protect the users of my system of Bio-Dynamo-Chromatic Diagnosis and Therapy, my standardized Chromatic Screens ar named *Valens Chromatic Screens*. This name is registerd in the United States Patent Offis so no one else can use it.

To further protect the users of this system, I am getting out domestic and foren patents on the process of making the screens.

All the devices and instruments devized by me and made under my supervision ar trademarkt *"Valens."*

Some physicians hav criticized me for this, but they would not if they wer posted in the ways of the world. None of the devices used ar held at an exorbitant price, and it is only by protecting a system of this kind that it can be kept out of the hands of imposters, who would put out unreliable outfits to defraud the unwary physician.

In all professions and walks of life, there ar those who would never turn a stone or even push a banana peel off the sidewalk to protect a passer, yet they would criticize anyone else who did. However, such people ar in the minority.

(Many of the devices I use can be home-made for individual use. The text and illustrations show one how.)

I hav been a lifetime in developing this system, and hav just one aim in mind—*success*—and work to its attainment. *If my work wil aid suffering humanity, I feel wel repaid. There is no limit to this work. Its possibilities ar endless.*

VALENS PEDESTAL

The pedestal that I devized for use with the Valens Electric Bio-Dynamo-Chrome is shown in Figs. 112 and 115. It is so arranged that it can be raisd or lowerd to radiate the light from the Chromatic Screen directly on the epigastric region. Fig. 118 givs the exact dimensions of this

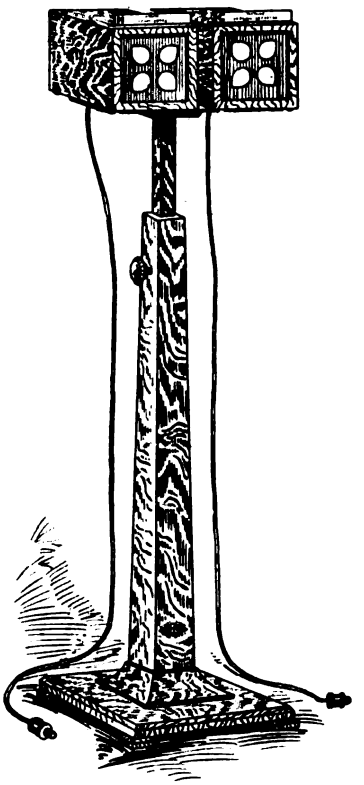


Fig. 116. Two Valens Electric Bio-Dynamo-Chromes used together on one pedestal. These I use for development work. They ar not needed by the B-D-C practician.

pedestal so any cabinet maker can duplicate it. They should be made of quarterd oak, natural finish, to match the Bio-Dynamo-Chromes.

Two Bio-Dynamo-Chromes on One Pedestal

Fig. 116 shows how I use two Electric Bio-Dynamo-Chromes on one pedestal. They ar so arranged as to focus together about five feet away from the Chromatic Screen. I use such an arrangement for experimental work and for combining radiant colors. In this manner I can use two different

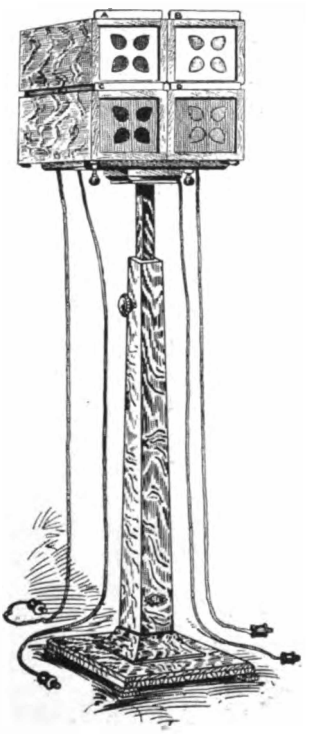


Fig. 117. Showing four Electric Bio-Dynamo-Chromes on one pedestal. This I use for development work only. It enables me to redily bild up the Chromatic Screens. Such a combination is not cald for by B-D-C practicians.

colord screens at a time to observ the effects upon the reflexes and in that way can arrive at the proper combination to make in the Chromatic Screens. *This special arrangement is necessary only in reserch and development work.*

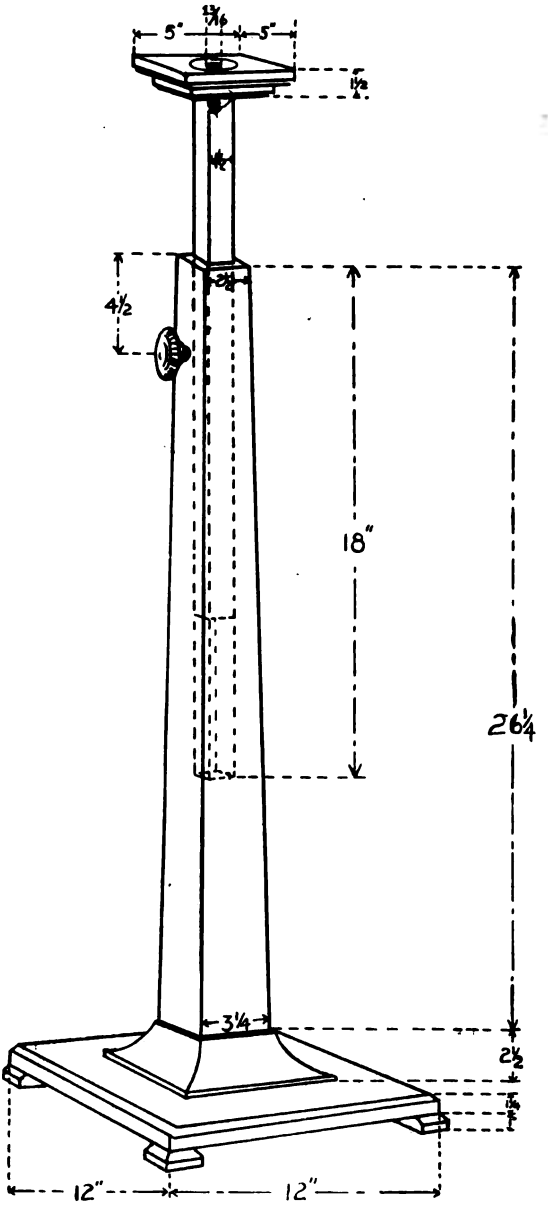


Fig. 118. Working plan of Valens Adjustable Pedestal. It should be made of quarterd oak to match the Valens Bio-Dynamo-Chrome.

In like manner four Electric Bio-Dynamo-Chromes, focusing on the same area, can be used at one time, as shown in Fig. 117.

Fig. 119, shows how a light-proof box can be attacht to a B-D-C outfit for holding the Chromatic Screens.

Fig. 120, shows how an elegant table can be easily made to go on one of the Valens Pedestals.

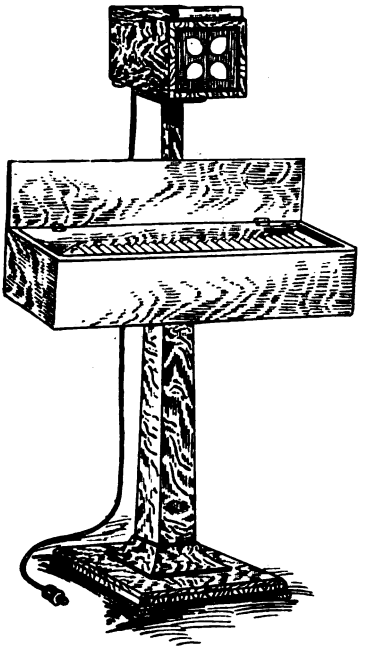


Fig. 119. Showing Valens Bio-Dynamo-Chrome with a light-proof box attacht for holding from a dozen to two hundred Chromatic Screens. Any good cabinet maker can make such a box and every B-D-C practician wil find same a great convenience. Notis that the lid shuts down light-proof.

VALENS TURNTABLE

Figs. 13, 16, 17, etc., show the simplest form of turntable that I use for turning the patient. The stationary part of this turntable can be made any height to accommodate the physician. The best average height is from four to six inches. The top of this *stationary* or under part is coverd with hevy metal so that the ball-bearing rollers in the upper or revolving part wil hav a solid material to turn on.

An axle is attacht to the lower or stationary part, upon which it turns. The upper surface of the turntable can be coverd with aluminum, but it is not necessary as we hav found that grounding the individual to the bare skin is infinitly better than grounding thru the shoes or stockings. However, aluminum makes a fine appearing top.

By using a turntable the individual does not hav to move a muscle when being turnd from east or west to north or south, which greatly facilitates the work of diagnosing.

Fig. 120. Showing how a very attractiv offis or waiting-room table can be made to go on a Valens Adjustable Pedestal. Any good cabinet maker can make this elegant outfit. It should be made of quarterd oak, natural finish. The top is attacht to Pedestal by means of a Pedestal Pin.

Figs. 121 and 122 show *Valens Turntable,* made to match Valens Pedestal. This makes a beautiful outfit to hav in the diagnosing room. This turntable is fourteen inches square and the top or revolving part is coverd with alumi-

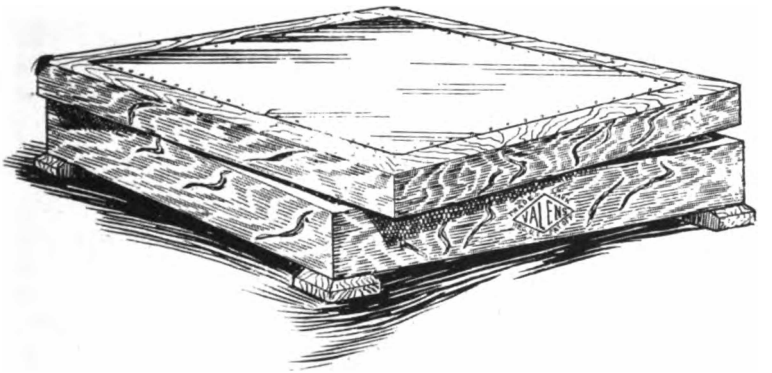


Fig. 121. Showing Valens Turntable made to match the finish of the Valens Pedestal. The top is of aluminum. This is an elegant outfit.

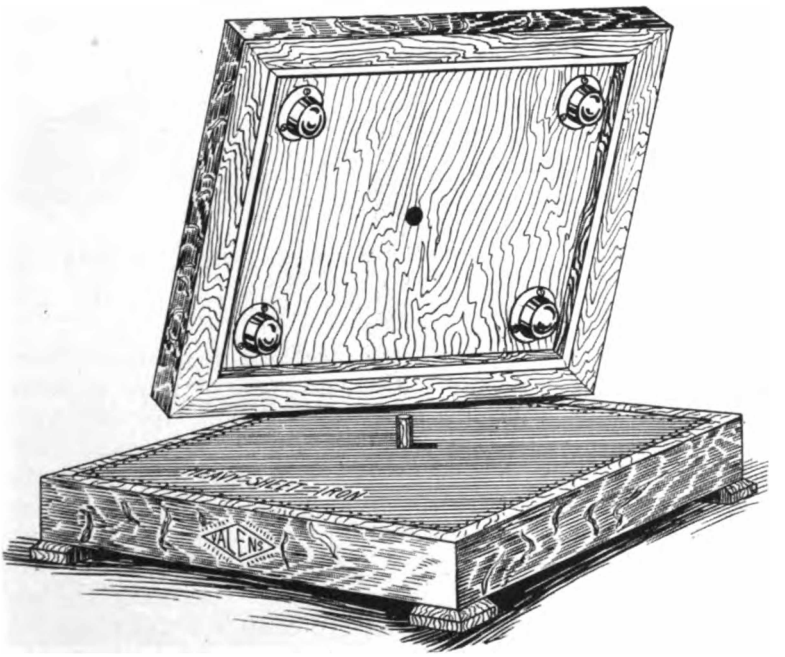


Fig. 122. Showing construction of Valens Turntable . It is 14 inches square. Ball bearings ar used for the rollers. Hevy sheet iron is used for the rollers or casters to glide on. The top is so constructed that it can never warp.

num. Any good cabinet maker can make a turntable like the one illustrated. Quarterd oak in natural finish I think is the best.

VALENS FOOT SWITCH

Fig. 123 shows the foot switch which I employ for turning the colord light on and off. I find the use of such a switch is imperativ in doing accurate work when the patient faces north or south and has the light from the Bio-Dynamo-Chrome thrown directly on the bared chest. The light can be instantly extinguisht by the foot and the change of tension in the capillaries can be immediately demonstrated by air-colum percussion or other air-colum vibration.

Another advantage of the foot switch is found when demonstrating the use of the ruby light (Fig. 20). If the

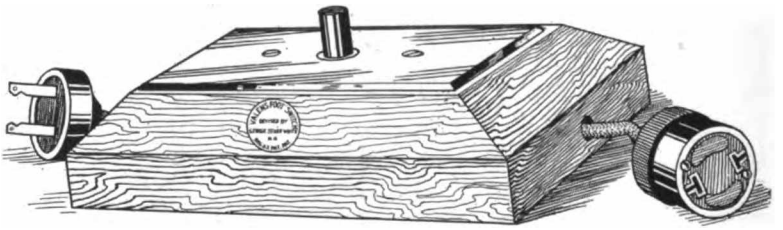


Fig. 123. Valens Foot Switch for Bio-Dynamo-Chromatic Diagnosis. Each pressure of plunger puts light on or off.

ruby light is shining on the bared chest of a normal individual while facing north or south, the same tone obtains as when they ar facing east or west. By extinguishing the ruby light the same change in tension takes place as when the person is turnd from east or west to north or south. By using the foot switch to extinguish the light, the hands ar at liberty and no assistant is needed.

The *Valens Foot Switch* is a standard, porcelain protected, plunger switch of the best make. The porcelain box is set into an oak block and coverd with a brass plate. A standard cord connector is attacht to the switch, so it can be attacht to any standard Hubbell plug. Each push of the plunger puts the light on or off.

Any good electrician can make such a device.

Fig. 124 shows the author's diagnosing table outfit—energy conductor, bio-dynamo-meter, turntable and foot switch. This outfit is very convenient and shipshape. It is made of quarterd oak, natural finish.

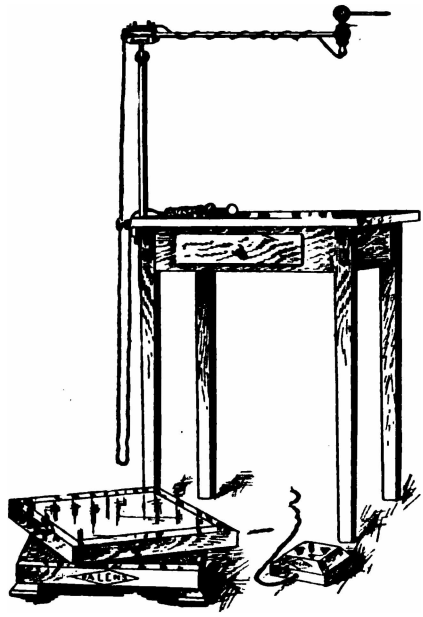


Fig. 124. Showing the author's energy conducting outfit attacht to a table. The Bio-Dynamo-Meter is shown on top of adjustable post. The turntable and foot switch ar also shown—all made of quarterd oak, natural finish.

RADIANT COLORS—THEIR GENERAL INDICATION IN BIO-DYNAMO-CHROMATIC WORK

CLASSIFICATION

If one wil carefully observ the radiations from my various Chromatic Screens and then compare these colors with the indications, they wil be impresst with the following facts which hav a very great significance, as I shal briefly mention when discussing the action of drugs.

Radiant "red" as wel as other colors at the "negativ" end of the chromatic curv (Fig. 29) ar indicated in conditions that hav a particular tendency to produce anemia or a reduced hemoglobin index, for example, tuberculosis.

Radiant "blue" as wel as other colors toward the "positiv" end of the chromatic curv ar indicated in conditions that hav a selectiv action upon the spleen and spinal cord, for example, syfilis.

Radiant "violet" at the neutral part of the chromatic curv is indicated in conditions that hav a selectiv action upon the urinary tract, for example, gonorrhea.

Radiant "green," which is toward the positiv end of the chromatic curv, is indicated in conditions having a selectiv action upon the hepatic system, for example, jaundis.

The brilliant colors, such as "orange," "yellow," and "magenta" ar indicated in conditions having a selectiv action upon the nervous system, for example, neuroses and mental derangements.

The combination of radiant "green" and radiant "blue" is indicated in conditions having a selectiv action upon both the liver and spleen, for example, malaria.

Radiant "red" and "green" combind hav a selectiv action upon conditions producing a profound toxemia out of all proportion to the symptoms, for example, influenza and tonsilitis.

I could go on indefinitly enumerating many different combinations of colors which hav selectiv actions upon the digestiv tract, respiratory tract, etc.

It can redily be seen how, when one becomes accustomd to the radiant colors used in B-D-C work, they wil "feel" or sense the color or combinations of colors that ar indicated in treating the various conditions that come under their observation.

This classification is not empirical, but on the contrary was made *after* the clinical findings had been formulated. I had no idea of this classification until I began to tabulate the various conditions and the indicated Chromatic Screen used for same.

Drug Energy or Polarity of Remedial Agencies

This discussion must necessarily be brief as the subject is so great that a large volume could be written about it. I want to call your attention to it here, and perhaps someone who has the time can write a very interesting book on this wonderfully instructiv and far-reaching topic.

Actinic colors—blues and blue combinations—*ar electro-positiv* or *neutral.*

Non-actinic colors—reds, yellows, greens and their combinations—*ar electro-negativ.*

One color radiation (rate and mode of motion) can neutralize or change another color radiation and thus produce an entirely different radiation (different rate and mode of motion).

Foods appear to possess polarity or, in other words, to be electric or magnetic.

Is it not this "polar" property of foods that giv them their individual properties when taken into the animal economy?

Is it not the latent electrical or magnetic property of foods that make them suitable for one person and not for another—curativ for some malconditions and producing malconditions in some who hav helth?

Is it not the electric or magnetic property of foods that make some particular foods synergistic with certain remedies while some other foods would be antagonistic?

I firmly believe that it is the electric and magnetic properties of foods which make them stabilizers of metab-

olism. Each particular food when digested or when it enters the animal economy produces its definit rate and mode of motion. At times the same food wil agree with a person and at other times it wil not. From my study of polarities, it seems as tho the same food at times wil destroy the normal celular rate and mode of motion, while at other times it will stabilize it. When selecting foods as remedies, I believe this electric or magnetic property of food should be constantly kept in mind.

Drugs of all kinds when taken into the animal economy change the celular rate and mode of motion in that system. This is fundamental.

If we wil carefully look over the magnetic polarity of drugs themselvs or of the polar energy produced by the action of a given drug upon the system, we wil be amazed to observ how this law of polar equilibrium works out.

Colors also hav their polar effect, as has been previously mentiond.

Disease really means dis-ease, that is, lack of ease or lack of polar equilibrium in the body. Exprest in another way, disease means an abnormal celular rate and mode of motion.

Tuberculosis, for example, designates an abnormal celular rate and mode of motion in the body caracterized by certain symptoms or conditions in which the tubercle bacilli ar present, or else a condition in which the tubercle bacilli wil thrive.

The abnormal rate and mode of motion given to the vital force of the body suffering with tuberculosis is temporarily normalized by radiant ruby light. This same abnormal celular rate and mode of motion is temporarily neutralized by the negativ pole of a bar magnet. Therefore the polar energy given off from a tuberculous lesion is electro-positiv.

The remedies which ar the most potent in this condition and which hav been used the longest and with the most benefit ar stimulating in nature and radio-negativ and hav an affinity for the positiv pole.

Red color is stimulating and has for years been used with success as an auxiliary in treating tuberculosis.

Negativ electricity is stimulating and has been used with beneficial results in treating this same condition.

Oxygen and iodin hav an affinity for the positiv pole and ar very potent remedies in treating tuberculosis.

Every remedy that is beneficial in tuberculosis possesses an affinity for the positiv pole. Do they not neutralize the abnormal energy from the tuberculous lesion in the same manner as non-actinic color radiations do?

Any medicament colord red or yellow exercizes a far more beneficial result in treating tuberculosis than the same medicament not so colord.

Sunlight is one of the most potent remedies for tuberculosis. The red rays from the spectrum ar the ones which penetrate deepest thru the tissues. The skin has the peculiar property of admitting the red rays of the spectrum and keeping many of the others out. This is easily proved by putting an electric light bulb into the mouth and observing the color of the cheek opposit the light. *It will always be red.* This is not causd by the color of the blood because the same fenomenon obtains when the light is put into the mouth of a ded person.

Every abnormal condition of the body seeks an agency to normalize itself, and is not that a polar affinity rather than any other?

The body demands and must hav its polar affinity in all abnormal conditions before it wil possess a normal celular rate and mode of motion—helth.

I believe it is the abnormal polarity of the body in any given disease that makes certain remedies or foods especially beneficial in that given condition.

I believe those remedies or foods must create the opposit polarity of that given disease to be of any benefit.

I believe the secret of nature and of natural remedies, be they of light, color, sound, radioactivity, foods or drugs, lies in their ability to normalize the abnormal polarity in any given disease.

I believe the principle function of all remedial agencies is to restore magnetic equilibrium, that is, a normal celular rate and mode of motion—helth.

Syfilis is diagnosed by the "complementary blue" radiant light, that is, a radiation of the opposit polarity to the dark-room-ruby. This color, when radiated upon the body wil temporarily normalize the abnormal rate and mode of motion caused by this toxemia.

The positiv end of a bar magnet, if used in a certain manner, wil do the same. Therefore the energy given off from a syfilitic lesion is electro-negativ.

Mercury is the time-honord remedy and the so-cald "specific" for syfilis. Mercury is electro-positiv and has an affinity for the negativ pole, and as medicinally used it has a bluish color.

Iodin is of an opposit polarity to mercury, but it also has a specific action on the abnormal condition, syfilis. I believe the reason for this is that iodin has the peculiar property in syfilitic conditions of producing compounds in the body which hav an affinity for the negativ pole and therefore ar electro-positiv in nature. This is one reason why iodin should be given as *iodin* and not in a compound.

Every remedy used for treating syfilis should be electro-positiv or be able to produce electro-positiv elements, and thus be able to neutralize the abnormal negativ energy induced by the syfilitic condition.

Malaria is on this same order as it can be diagnosed by the "complementary blue" color, but it has a different rate and mode of motion from syfilis as it can be diagnosed specifically by a combination of blue and green. Right here stop and think how malaria confuses the Wassermann test for syfilis. Some claim that 60 per cent. of all malarial cases wil giv a Wassermann positiv.

The rate and mode of motion of quinin, arsenic, and the iron preparations, which hav a specific action on the plasmonium malariae, ar the same, or similar to, the rate and mode of motion from the *F*-Chromatic Screen, which differentiates malaria from syfilis.

The radiation from this same screen temporarily normalizes the abnormal rate and mode of motion from the body intoxicated with malarial poison or quinin.

Right here I want to again mention the fact that the term, "polarity," is not broad enuf to cover biological conditions, because certain rates and modes of motion may be *similar* to the rate and mode of motion of one pole, but not identical with it.

Hahnemann proved that quinin (the bark from which it is made) would produce symptoms identical with those of malaria. If a person is given quinin until they hav the malarial symptoms, the radiations from the *F*-Chromatic

Screen wil temporarily normalize that abnormal condition, as is evidenst by the MM VR.

Anemia is a condition in which the hemoglobin is deficient. Therefore the positiv element of the blood overbalances the negativ. The only remedies that ar beneficial in rectifying an anemic condition ar stimulating in caracter. The remedies that ar most potent in treating anemia ar naturally red in color—they hav an affinity for the positiv pole. I am aware of the fact that "iron" is a time-honord remedy for anemia, but modern workers now know that iron *per se* plays no part in curing anemia.

Sunlight has a specific action upon one suffering with anemia and, as before mentiond, sunlight givs to the body a predominance of red rays.

Oxygen along with sunlight wil cure anemia. They ar specific.

Venous blood givs off electro-positiv energy and arterial blood givs off electro-negativ energy. Therefore any condition which lowers the hemoglobin changes the blood's normal polar equilibrium and must cause unrest of tissue. To stabilize anemic blood, electro-negativ elements must be employd.

Red light has been proved to be beneficial in treating anemia. I believe that the foods that ar of the greatest benefit in anemia ar electro-negativ or become so when acted upon by the digestiv juices.

Digestiv and stomac conditions ar best treated by remedies that ar of a yellow or yellow-brown color.

The colors that I hav proved homeopathically demonstrate this fact.

Another wel known principle in remedial agencies I want to bring out, and that is that the *administration* of the remedy has much to do with its curativ action, that is, with its ability to normalize "abnormal celular rate and mode of motion."

Ipecac, for instance, in minute doses "settles the stomac" and allays vomiting while large doses produce an emetic effect. This same fact is evidenst in alcohol. When given in small doses it has a stimulating or an electro-negativ action upon the body, but in large doses it has a narcotic effect, that is, it is electro-positiv in caracter.

Following out this reasoning, it can be seen that some remedies being electro-negativ in caracter may be clast as

electro-positiv or vice versa, depending upon the quantity administerd.

Any condition which causes muscular contraction generates energy that is electro-negativ in caracter because the condition causd by activity is electro-negativ, while that causd by rest is electro-positiv.

Gonorrhea is diagnosed by a neutral-violet-radiant color (*D*-Chromatic Screen). Violet is a neutral color, that is, it is produced by the combination of the negativ color red and the positiv color blue.

A gonorrheal lesion givs off energy that is dissipated by both poles of the bar magnet, and is also dissipated by the radiant energy thru the *D*-Chromatic Screen.

The remedies that ar most potent in neutralizing the gonorrheal condition ar violet or purple in color, or produce that color when taken into the system.

Any food or drink that is negativ or red in caracter aggravates a gonorrheal condition, but all foods or remedial agencies which ar neutral or positiv in caracter aid in curing the condition.

Febril conditions call for blue or remedies that ar electro-positiv, cooling and sedativ.

May it not be that the true value of *all* remedial agencies ar their color or their color-producing qualities? I hav had this fact very forcibly brot to my attention by many of my pupils, and altho I hav not had time to elaborate on it, I made one very remarkable finding, namely, "scarlet red" is a red anilin dye in an oily base. This ointment has been used with markt success in healing certain kinds of open sores. I had a patient under my care on whom I used this ointment and it had no effect. I took some of the same base and made it blue, and it acted like magic in healing up the sore. This sore gave off energy which could be neutralized by radiant blue.

I hav receivd similar reports from my pupils. One in particular, P. C. Jensen, Ph.C., MD., of Manistee, Mich., has given me valuable suggestions along these lines. He took an oily base, colord it with carminic acid and treated a sore with it but it had no effect. He then colord the same base with blue and the sore was heald with remarkable rapidity.

Was not the color practis of the "ancients" based on this chromatic principle? They certainly used colors in a

way that I do not believe was empirical. It seems as tho they had some fundamental reason for it. Their manner of painting the skin I believe had some specific action upon the conditions for which they painted it. The skin being exposed to the sunlight, radiant color must of necessity hav reacht the blood thru those various colors.

My experience with this method of painting the skin has been limited, but it seems as tho, if the skin wer colord with certain indicated colors and exposed to the sunlight, there would be a more profound effect upon the abnormal condition of the patient than if the skin wer not so painted. This givs us a foundation for Chromatic Therapy which is discust in another part of this book.

GALVANOMETRIC AND B-D-C TESTS

Vegetable and Animal Electrology

Any rate and mode of motion in these tests indicated as "negativ" can be dissipated by the positiv end of a bar magnet possessing about a six-inch deflecting power (Figs. 23 and 80). Radiations from my *C*-Chromatic Screen wil also neutralize every rate and mode of motion designated by the word, "negativ."

Any rate and mode of motion in these tests indicated as "positiv" can be dissipated by the negativ end of a bar magnet possessing about a six-inch deflecting power. Radiations from the *A*-Chromatic Screen wil also neutralize every rate and mode of motion designated by the word, "positiv."

Any rate and mode of motion in these tests indicated as "neutral" can be dissipated by both the positiv and negativ ends of a bar magnet possessing about a six-inch deflecting power. Radiations from my *D*-Chromatic Screen wil also neutralize every rate and mode of motion designated by the word, "neutral."

When the words "ruby light" ar mentiond, they designate radiant energy thru my *A*-Chromatic Screen.

When the words "blue light" ar mentiond, they designate radiant energy thru my *C*-Chromatic Screen.

When the words "violet light" ar mentiond, they designate radiant energy thru my *D*-Chromatic Screen.

The lamp used back of these screens in each instance was a 60-watt tungsten, and the Chromatic Screens wer used in the electric Bio-Dynamo-Chrome shown in Figs. 111 and 115.

The galvanometer tests wer made with a very sensitiv instrument wel set in solid masonry so no building or erth vibrations would affect the findings.

For the Bio-Dynamo-Chromatic tests, a young, helthy person was used as a *control* or "human galvanometer."

The tecnic in all these tests was as follows:

I placed the substance to be examind on a grounded aluminum plate (Fig. 125) and had the control stand facing east or west, grounded to aluminum (Fig. 78). An aluminum wire came in contact with the portion of the substance being examind (Fig. 125). The following wer my findings:

A fig leaf just pickd from the tree (Fig. 125) gave from its stem and large veins negativ energy—dissipated by the blue light. (*C*-Chromatic Screen.)

Between the stems and veins it gave positiv energy—dissipated by the "ruby" light. (*A*-Chromatic Screen.)

Fresh roots and vegetables just puld from the ground gave negativ energy—dissipated by the "blue" light.

The stem end of oranges, lemons, and apples gave negativ energy—dissipated by the "blue" light.

The core of the fruit gave negativ energy while the edible portion of the fruit gave positiv energy.

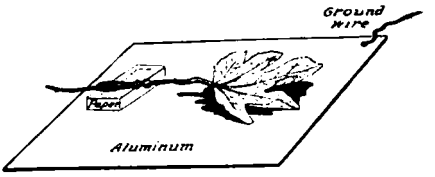


Fig. 125. Showing a grounded aluminum plate used in making tests of B-D-C reactions of fruit, leaves, etc. This figure shows a fresh fig leaf on the aluminum plate. Notis that the energy-conductor terminal rests on a paper box so it is insulated from the metal plate. The energy-conductor terminal is aluminum.

The rind or protectiv part gave neutral energy—dissipated by the "violet" light. (*D*-Chromatic Screen.)

Duck egs that I hav reason to believe wer fertil gave from the ends neutral energy—dissipated by the "violet" light.

Hen's egs that had been set on four days in some cases gave positiv energy and in some cases negativ energy. Those giving no energy wer not fertil. I do not know what sex is indicated by the different polarities, or rates and modes of motion, as I hav not had time to work it out. It requires a great deal of time to incubate one eg in a separate compartment and watch its development. My experiments ar simply to show that there is a difference in polarity, or rates and modes of motion, in egs, and it must mean something. The

chick from one eg giving positiv energy, dissipated by the "ruby" light, I was able to mark and watch develop and it proved to be a pullet.

The difference in "polarity," or rates and modes of motion, of fruit and vegetables has a very far-reaching significance, because fruit that was decayd around the stem gave positiv energy from the decayd site. An orange with a decayd spot on one side gave from that spot only positiv energy but from the side that was sound, it gave neutral energy—dissipated by the "violet" light.

My experiments seem to show that by means of a human control (in other words, the vital force or magnetic human atmosfere) and colors, we hav as accurate a method of differentiating "polarities," or rates and modes of motion, as by means of the most delicate galvanometer. (My tests wer made both by a delicate galvanometer and by colors, and in every instance they chekt up as above outlined.)

My findings seem to show that everything that grows in the erth is negativly charged from the roots to the sap, and by means of the sap to the leaf; while the foliage between the veins is positivly charged.

Fruits seem to receive their electricity or vital force in the same manner. For example, the apple is negativ from the stalk to and including the core, while the edible portion is positiv. The outside rind or conserver of the fruit's energy is an insulating material and givs off neutral energy. A fact to be wel observd is that the part of the plant which is negativly charged is the part that is usually employd medicinally.

If the negativly charged part of the fruit is used as food, it is usually cookt. Vegetable poisons, as a rule, ar extracted from the negativly charged part of the plant. A strong infusion of tea or coffee as wel as a solution of tobacco givs off negativ energy—dissipated by the "blue" light.

It is noteworthy that the stems and leaves of fruits as wel as the veins of same, and the roots of plants, giv off negativ energy.

Normal generativ organs giv off negativ energy.

It is also interesting to observ that the portion between the stems and veins and leaves, and the edible portion of the fruit giv off positiv energy, which is the same energy as that given from venous blood.

From these findings, it seems as tho *generation* wer electrically negativ, while *degeneration* wer electrically pos-

itiv—one energy corresponding to the "ruby" light and the other corresponding to the "blue" light. (See Chromatic Curv, Fig. 29.)

My findings show that any ded material givs off energy the same as the atmosfere in which it is placed but that decaying material, *where the process is going on,* givs off positiv energy—dissipated by the "ruby" light.

A ded substance in vitiated air givs off a different energy than if it is saturated with pure air. This givs us another scientific reason for living as much as possible in fresh, non-polluted air.

Tobacco smoke changes the polarity in a room in the same manner that carbon-dioxid gas does.

Fig. 126 shows how I arrange poultry or birds in crates to test them out by means of the B-D-C system. It

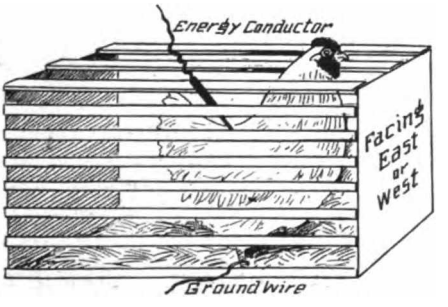


Fig. 126. Showing how I arrange birds and poultry in crates to be tested by the B-D-C method. Notis how the bird is grounded and how the aluminum energy-conductor terminal is held in place. In all these tests the subject (control, or human galvanometer) must face east or west and be also grounded to aluminum and in a subdued light.

wil be notist that the crate is so narrow that the bird cannot turn around in it. By running a wire across the slats, various sized birds can be tested in the same crate.

This picture shows how the bird is grounded and how the energy conductor is placed and how the crate is faced.

A bird with avian tuberculosis wil giv off energy which, when conducted to a subject, as shown in Fig. 78 or Fig. 99, wil be dissipated by the dark-room-ruby light (*A*-Chromatic Screen).

The energy from the generativ organs and from other parts of the bird can be conducted and examind in this manner.

Energy of the Hand
Tests by the Galvanometer

In testing the hand with an extremely sensitiv galvanometer, I hav discoverd some very peculiar facts. Fig. 127 represents the two binding posts of the galvanometer. When the thum of the *right* hand is at the upper binding post and the fingers of the same hand at the lower binding post, the reflecting mirror of the galvanometer wil point, for example, toward positiv (blue). If the hand is turnd about so that the thum is on the lower binding post and the fingers on the upper, Fig. 128, the indicating mirror wil turn toward the opposit pole, negativ (red).

Fig. 127.

Fig. 129.

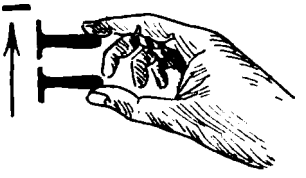


Fig. 128.

Fig. 130.

The black terminals represent those from a galvanometer.

The plus and minus signs show the result of hand energy past thru a galvanometer.

If these binding posts ar graspt by the *left* hand as shown in Fig. 129, with the thum on the upper binding post and the fingers on the lower binding posts, the indicating mirror wil turn toward negativ (red). If this hand is reverst so that the thum is at the lower binding post and the fingers at the upper, Fig. 130, the indicating mirror wil turn toward the opposit pole, positiv (blue).

This seems to prove that the electrical currents thru the thum ar opposit to those which pass thru the fingers of each hand, but if the thum of the left hand is, for example,

plus (positiv), the thum of the right hand wil be minus (negativ). If the fingers of the left hand ar minus (negativ), the fingers of the right hand wil be plus (positiv).

The polarities of the fingers and the thums ar not constant in the same person. For example, in the morning from eight to twelv, the polarities may be constant, but any time in the afternoon until six o'clock, the polarities may be opposit to what they wer in the morning and at evening.

I hav tried to formulate a law for this change but so far hav not been able to do so. The different fases of the moon do not seem to effect it. I hav tested the right hand of very many men and hav found that it is not the same at the same time of day in different men, and I hav tested women with the same result.

The *majority* of women giv positiv energy from the fingers of the right hand while the *majority* of men giv positiv energy from the fingers of the left hand, provided the hand is clencht and the index finger pointed as shown

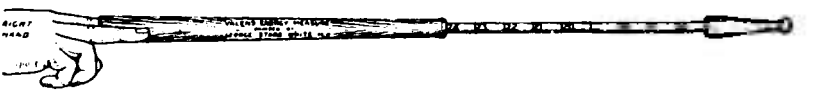


Fig. 131. Showing the Valens Energy Mesure. The end that the finger is in is lined with pure aluminum. The plunger goes in and out and is markt to be used as a mesure.

in Fig. 89. Clenching the hand in this manner makes the polarity more constant than it is if taking hold of the binding posts of the galvanometer as above described.

Tests by Means of the VR

In every test when a person is used as a "human galvanometer," he or she should be helthy. They should be grounded and face east or west, and the energy should be directed toward the epigastric region, the same as in following out all the tecnic described for Bio-Dynamo-Chromatic work. (Fig. 78).

The sympathetic-vagal reflex wil be elicited in an individual facing east or west if another person points toward her. (Fig. 78.)

Fig. 131 shows an energy mesure for the hand. It is so constructed that the plunger can be pusht in or out, and

a scale is on the plunger so as to tel how many inches the mesure is long. In the finger end of this energy mesure is an aluminum cup or large thimble. If the index finger of the right hand is placed in this thimble, as shown in Fig. 131, and the distal or free end of the mesure is placed against the epigastric region of an individual facing east or west (Fig. 132), the VR wil be elicited, provided there is energy enuf in the hand to do it.

In experimenting with this mesure, my findings ar as follows:

A female, who is sexually normal, pointing the finger of her right hand with this device when it reads 18 inches or more, wil elicit the VR in a subject facing east or west.

If she points her left hand in this manner, it wil not elicit the VR unless the mesure reads 12 inches or lower.

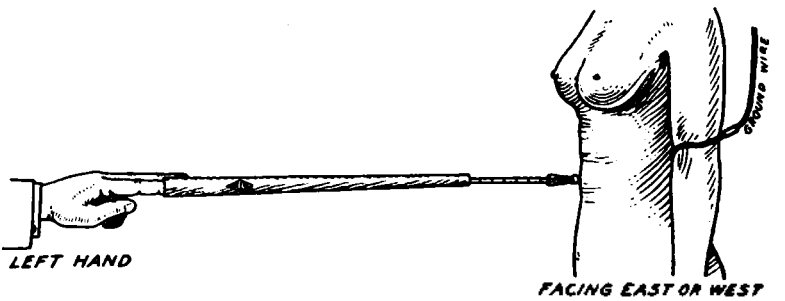


Fig. 132. Showing how to use the Valens Energy Mesure.

If a male, sexually normal, repeats this maneuver and points his left hand, it wil elicit the VR, 18 inches or more distant, while his right hand would not elicit the VR unless it wer 12 inches or less distant.

I find that this fenomenon does not depend upon the *polarity* of the energy but only upon the *intensity* of the energy.

Another peculiar fenomenon is that if the index finger of the *right* hand wil elicit the VR at 18 inches, the thum of the *left* hand wil do the same. (Fig. 79.)

I have not had time to work out all the diagnostic values of these fenomena, but record them here as a scientific fact.

Radiant Color Dissipates Hand Energy

If the dark-room-ruby light wil dissipate the energy from the *index finger* of the left hand (Fig. 89), the complementary blue wil dissipate the energy from the thum of the same hand (Fig. 79); and the neutral violet wil dissipate the energy from the *thum and finger* if both ar pointing at the same time, as shown in Fig. 90.

Reversing of Energy

I hav made a most startling discovery regarding the reversing of these energies. If an orange-yellow light is shed upon the individual, the maximum or minimum energy from either hand wil be reverst, and that which was in the right hand wil be in the left, and *vice versa*. This change wil last for some minutes after the light is extinguisht.

This same fenomenon obtains if the individual drinks a yellow liquid such as saffron tea, orange pekoe tea, orange juice, etc. The change from drinking this yellow liquid obtains five or more minutes, depending upon the individual.

One fenomenon which *appears* ridiculous but which is true nevertheless, is that if sterilized water is put into a steril amber bottle and exposed to the sunlight for about eight hours, and a cup of this water drank, the maximum energy is reverst the same as if the person drank a yellow colord liquid or had an orange-yellow light shed upon the body. Dr. Edwin T. Babbitt mentions in his classical work on the Principles of Light and Color the fact that "ambereau" (water exposed several hours to sunlight in an amber bottle) has a special curativ effect for certain diseases and that water exposed in a blue bottle has another effect, and so on. This led me to make these experiments, and it is proof extraordinary that *color can produce a chemical effect without producing an ocular effect*. This chemical effect of color probably plays an immense part in the universe.

Inverted Energy

A normal female one or two days before menstruation begins and two or three days after it has begun givs energy of about the same intensity from each hand.

A male or female with inverted sexual propensities givs maximum energy opposit to that which a normal individual givs.

Detecting the Sex of the Unborn

A normal female pregnant with a *female* fetus after the fourth month usually givs the same intensity of energy from the *right* hand as if she wer not pregnant.

A normal female pregnant with a *male* fetus after the fourth month usually givs from her *left* hand the maximum amount of energy.

By comparing the energies from each hand of the pregnant female, one can usually prognosticate the sex of the unborn. To do this correctly, every little detail must be carried out to a nicety. The mother should neither eat nor drink anything for six hours before the test. As in the B-D-C work, she should be in a room with a subdued light, grounded, and facing east or west; and the father of the child should *not* be in the room when the test is made.

The person used as the "galvanometer" should be a normal female.

Altho I do not consider this test infallible, I do believe that when once we understand better the cause of reversing of energies in the body, the test wil be reliable. I should be very glad to hear from every one who uses this test, so I can tabulate the results, as it is a very interesting subject and means a good deal more than simply telling the sex of the unborn.

Detection of Paternity

I hav discoverd a very peculiar fenomenon in making many of these tests. I hav found that if the father of the fetus is within five or eight feet of the mother, or in fact in the same room, while the test is being made, the energy from the hands wil be reverst, and the findings ar opposit to those abov mentiond. If, however, the man in the room is not the father of the fetus, there wil be no change. This seems to indicate the subtle influence of vital force, aura, or magnetic human atmosfere, of one person upon another.

I would not think of going into court with these findings as a proof of pregnancy or of paternity, but it is an interesting experiment, and whether it always proves true or not, it shows that there is something in vital force that is deeper even than thot.

Recapitulation of "Polarities" or Rates and Modes of Motion

Aluminum to living skin.....negativ
Arteries, activ (same as left ventricle).....negativ
Arthritic joints—not specific.....positiv
Blood, activ arterial .....negativ
Blood, activ venous .....positiv
Cancer—B-MM VR—lesional energy.....positiv
(VR dissipated by radiations thru B-Chromatic Screen)
Copper, brass, silver, iron, gold, etc. to living skin.....positiv
Ebonite rubd with cat's fur.....negativ
Egs .....postiv, negativ or neutral
Epilepsy .....105-MM VR
Eye and ear, right—living female.....negativ
Eye and ear, left—living female.....positiv
Eye and ear, right—living male .....positiv
Eye and ear, left—living male.....negativ
Fruit, live—stems of leaves and fruit, veins, roots.....negativ
(Same as arterial blood. Ovaries and testicles hav the same polarity.)
Between stems and veins of live leaves, and the "meat" of fresh fruit (same as venous blood).....positiv
Decaying fruit .....positiv
Glass rubd with silk.....positiv
Goiter, energy from living subject.....positiv
Gonorrhea—lesion energy D-Chromatic Screen.....neutral
Gout—joints.....positiv
Grip..... G-MM VR
Hand, right—fingers—living normal female.....positiv
Hand, right—thum living normal female.....negativ
Hand, left—fingers—living normal female.....negativ
Hand, left—thum—living normal female.....positiv
Hand, right—fingers—living normal male.....negativ
Hand, right—thum—living normal male.....positiv
Hand, left—fingers—living normal male.....positiv
Hand, left—thum—living normal male.....negativ
Hart in living person, left ventricle (arterial side) ...negativ
Hart in living person, right ventricle (venous side).....positiv
Jaundis.....E-MM VR

Light—"polarity" of a person is reverst (the hand that was normally negativ is temporarily made positiv by some radiant colors; by eating or drinking material of certain colors; drinking "ambereau" (distild water exposed to sunlight for eight hours in an amber bottle.)

Malaria.....F-MM VR

Menses, delayd, or two days previous, and two or three days subsequent to beginning—polarity of hands .....neutral

Pain, from site of origin—Exaggerated Energy.....neutral

Pain from site of referd region .....only skin energy

Pus, acne, stafylococci—from focus.....positiv

Pus, streptococci—from focus.....negativ

Skin—normal .....neutral

Syfilis—C-MM VR—lesion energy.....positiv

(lesional energy dissipated by C-Chromatic Screen)

Tonsilitis.....106-MM VR

Testicles in living animal.....negativ

Tuberculosis—A-MM VR—lesion energy.....positiv

(lesional energy dissipated by A-Chromatic Screen)

Veins in living animal (same as right hart).....positiv

BIO-DYNAMO-CHROMATIC THERAPY
(B-D-C Therapy)

Bio-Dynamo-Chromatic Therapy signifies treatment by means of *intermittent radiant color and the magnetic meridian.*

B-D-C Therapy must not be confounded with Chromo-Therapy, which signifies color-therapy; nor with Foto-Therapy, which means radiant-light therapy.

The *fysics* underlying the B-D-C Therapy ar based on the following facts:

1. When a "normal" person is grounded and faces due north or south in a dark room, their MM VR is *elicited.*

2. When a person possessing a normal MM VR is grounded and faces due north or south in a dark room and a ruby light is shed upon the bare chest and abdomen, the MM VR is *dissipated,* that is, obliterated (Fig. 20).

3. If a person has an "abnormal" MM VR and is grounded and faces due north or south in a dark room, a certain radiant color wil temporarily normalize the abnormal energy from the body and elicit the the MM VR.

TECNIC

1. Hav the room dark.
2. Hav the patient grounded.
3. Hav the patient sit in a reclining position with the body relaxt, chest bare, and facing exactly north or south (Fig. 133.)
4. For a person with a normal MM VR, allow the dark-room-ruby light (A^4-Chromatic Screen) to radiate on the bare chest intermittently in such a manner that the light wil be on from two to four seconds and off from two to four seconds.
5. If the person has an abnormal MM VR, follow out the exact tecnic as above with the exception that the radiant color wil be the color that wil elecit the MM VR.

6. This treatment should be given at least once every week-day and last from twenty to forty minutes.

(*Note*—As stated under the hed of Oxygen-Vapor Therapy, I think it is a good plan to giv the B-D-C Therapy at the same time that the patient is taking oxygen vapor. See Fig. 133.)

Fig. 133. Showing B-D-C Therapy tecnic. Notis the grounding chain at the right. It is attacht to the inhalation tube, so when the patient has hold of the mask on tube, she is grounded. The chair is so placed that patient faces exactly North or South. Notis that the chair has an adjustable back, so patient can take an easy relaxt position. The B-D-C should be only about three feet distant from the bare chest. This figure shows a B-D-C and Oxygen-Vapor booth. I giv oxygen vapor at same time I giv B-D-C therapy.

To make the abov more clear, I wil cite some examples. Suppose the patient givs an *A*-MM VR or an attenuated *A*-MM VR. That patient should be treated with radiant light thru the *A*'-Chromatic Screen.

If the patient givs a *C*-MM VR, they should be treated with radiant light thru the *C*-Chromatic Screen.

If the patient has a normal MM VR, they should be treated with the *A*'-Chromatic Screen.

"Intermittent-Light Treatment"

The B-D-C Therapy has been described by some writers as an "Intermittent-Light Treatment," but unless the B-D-C tecnic is carried out, the intermittent color has no special effect upon the organism.

When one thoroly understands the fysics underlying the B-D-C work, they wil redily see that the patient must be in a dark room, grounded, and facing exactly north or south to obtain the stimulating effects given by this intermittent light treatment.

The Valens Bio-Dynamo-Chrome, illustrated in Figs. 111,114, 115, etc., is so constructed that it wil automatically intermit the light for this method of treatment. If the operator wishes to make his own outfit, he must obtain some kind of an arrangement for intermitting the light regularly, that is, so that it wil be on at intervals equal to the intervals that it is off, and hav these intervals from two to four seconds. This intermission of light could be given by means of a specially constructed motor or by a thermostatic make and break device.

The Valens Bio-Dynamo-Chromes hav a specially constructed thermic make and break device which can be redily adjusted without taking the box apart.

B-D-C Therapy Beneficial

That the B-D-C Therapy is a valuable adjunct to any other therapy has been proved beyond all doubt. The B-D-C Therapy aids nature in a natural manner—it exhilarates the sympathetic system in a way that nothing else can.

The B-D-C Therapy is homeopathic—it is safe and sound.

I believe this fase of the law of similars is as true as gravitation or any other natural law, but one must know

and understand the laws governing it the same as they would any other fysical fenomenon. Like other natural laws, this Magnetic-Meridian Law is so simple that anyone can demonstrate it to his satisfaction without the use of elaborate and expensiv instruments; and there is a scientific explanation of it all.

The far-reaching effect that this law has on humanity cannot be exprest in words. The fact that it enables the physician to diagnose tuberculosis, cancer, syfilis, etc., at their very inception, givs him an opportunity to act at the most propitious time and in the most propitious manner.

THE SOUND OF MUSCULAR CONTRACTION—FONO-MYOCLONUS

When the physician uses the stethoscope to auscultate hart or chest sounds, he seldom realizes that the very contact of his fingers with the stethoscope produces a "roar." This roar can be herd if the fingers ar prest tightly into the ears (muscular tension), but it wil not be herd if the ears ar plugd with something else than living tissues. (The roar obtaind by a conch shel placed over the ears is not a muscle roar but the roar of vibrating colums of air.) (Fig. 18.)

In 1898 Walter E. Scott, M.D., of Adel, Iowa, (as recorded in the Austin Flint Medical Journal), demonstrated that the roaring sound herd with the ordinary stethoscope over the hart was a muscle sound from the fingers and not from the hart.

Analagous observations wer made by F. Sicuriani who described this fono-myoclonus in neuropathic subjects. Fono-myoclonus, however, was first described by Bernabei in 1903, who described it as a "rumbling" herd in the muscles of neuropathic individuals even when they wer at rest. Scott's observations at that time wer directed more to the adventitious roar herd when auscultating with an ordinary stethoscope. Dr. Scott must be given credit for having made the most exhaustiv study of adventitious roars in stethoscopes. In the Iowa Medical Journal of July, 1903, he had a very exhaustiv article on this subject.

These adventitious sounds used to be considerd a fenomenon produced by the circulation of the blood, but Dr. Scott's experiments prove that is not true, but that the *sounds* ar from *muscle contraction*. These experiments can be easily duplicated by anyone interested. (See Fig 134.)

When using the ordinary stethoscope, the only way this adventitious roaring sound can be overcome is to apply the stethoscope without the contact of the fingers. It can be

suspended from the ears or by applying it by means of a belt or other device to hold it in position.

Scott's non-roaring stethoscope is of inestimable value in diagnosing peculiar conditions, especially in neurotics. The condition described by Sicuriani and Bernabei cannot be ascertaind by the ordinary stethoscope. No fono-myoclonus or sound of contraction of muscles can be herd thru this Non-Roaring stethoscope by mere contact of fingers, when holding it.

When any muscles ar put under stress and this stethoscope placed over them, the roaring sound wil be herd, but if the muscles ar paralyzed and do not contract, no roaring sound wil be herd. There ar some neurotic individuals over whose abdomen one wil hear a constant "muscle roar."

Fysiologists say that the natural muscle contractions occur 19.5 times a second. Every stimulation of a muscle

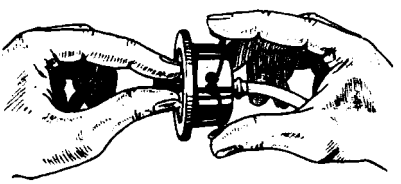


Fig. 134. Showing how to hold the Scott's Non-Roaring Stethoscope to hear the vibration of the fingers when they ar prest tightly. This method demonstrates fono-myoclonus.

causes a vibration and every vibration can be herd with a suitable apparatus.

In man the sound of the vibration of the voluntary muscles seems to always giv the same tone, regardless of the thickness or length of the muscle. Therefore when we lern to recognize the "muscle roar" we need never be misled by its presence.

By means of a Dr. Scott's Non-Roaring Stethoscope with a localizer on it as shown in Fig. 134, any muscle can be herd while under contraction. For localizing chest sounds, this localizer is of great value.

One very simple manner of hearing the roar of one's own muscles is to plug the ears with cotton and forcibly contract the jaws.

THE SPINAL COLUM AS A CONDUCTOR OF BIODYNAMIC ENERGY

Inasmuch as I had found many years ago that dynamic energy given to the spine by means of pounding, pressure, vibration, etc., would hav a definit effect upon the viscera, I naturally experimented upon the spine for the conducting of *bio*-dynamic energy.

Fig. 135 shows a form of sheet-led shield that I used over the back. *A* and *B* represent slides that wil allow the opening, *S*, to be over any vertebra or vertebrae desired.

I found that magnetic energy directed over the 6th and 7th cervical vertebrae had an effect upon the vasomoter

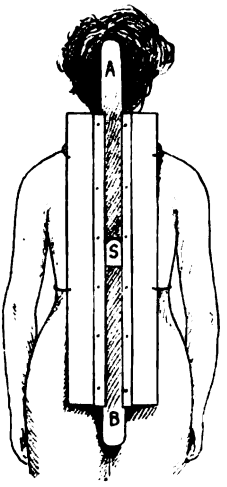


Fig. 135. Showing a spinal shield I used to use to study the effects of energy over certain vertebrae. The slides *A* and *B* could be placed so as to expose the spine, *S* at any location along the spine. This shield was made of led.

system. I also found that the same energy directed over the 3d and 4th thoracic vertebrae had a distinct effect upon the vasomotor system. The former evidently raisd the blood pressure by contracting the blood vessels and hart while the latter appeard to lower the blood pressure by dilating the blood vessels and hart.

The effects of magnetic energy over the named vertebrae ar nothing like the profound effect that hevy pressures, vibration, or concussion over these areas would hav.

In the chapter dealing with spinal stimulation, it wil be notist that stimulation of the 9th thoracic vertebra dilates the gall bladder and stimulation of the 5th thoracic vertebra dilates the pyloric end of the stomac, etc. These effects ar not at all markt when directing magnetic energy over these areas.

Some physicians evidently had some misconception of my findings when carrying out these experiments. They seem to think that I got a different kind of stimulation in the viscera if I used the positiv pole or the negativ pole, or energy from the index finger, or energy from the thum. I am sorry that some hav this wrong impression. No matter where the stimulation is given over the spine, if it contracts the vascular system, it contracts *all* of it and not any one localized area. If it contracts some special viscera, that is an entirely different matter, but if any energy affects the vasomotor *system,* it affects it as a whole and not any certain mapd off area. I never intended to giv any such idea from my findings.

It can be illustrated like this—If a normal individual faces north or south (it matters not which), the energy from the magnetic meridian steps up energy in the body which affects the vasomotor system (Figs. 25, 26, 27). This effect takes place thruout the *entire* organism, but there ar some areas that it is more easily interpreted over than others. This is all explaind when speaking of the Working Line, Reflex Line, etc. (Figs. 52 and 53).

Some persons hav even interpreted some of my work so as to say that a different effect is created thru the vasomotor system if a person faces north than when they face south. This understanding comes from a misunderstanding or a misconception of the fysics underlying this work.

Energy directed over different areas of the spine ar not at all reliable. Therefore I gave it up long ago. Some hav evidently misconstrued their findings in percussion from the fact that if the right hand side of the body is first percust by *deep* percussion, peristalsis in the intestins is effected and an area of dulness wil be found in some other part of the intestins within a few seconds.

The same holds true with other areas—one area-stimulation creating or eliciting another area-stimulation if carried out in a certain manner.

I wish every student of Bio-Dynamo-Chromatic diagnosis would bear this wel in mind so that they wil not be led into any errors by those who may, in various ways, attempt to confuse them by their own misunderstanding of the work.

It is wel known that a sudden blow over various muscles in the body, especially of the abdomen and chest, wil cause contractions in some other area of the body. These contractions ar causd by a stimulation over certain sets of muscles and hav nothing to do with any energy past thru the spine or anywhere else.

When I said in my opening discussion of Bio-Dynamo-Chromatic work that every organ in the body seemd to respond to every rate and mode of motion, I ment that *every organ and every part of the body as a whole,* not one area to the right or left of the umbilicus or abov or below it, or over the apex of the hart, or over the appendix, or over the sigmoid. I do not understand how some hav so misconstrued my former teachings on this subject.

Some hav seemd to understand in my demonstrations of energy conducted thru the spine that a certain area of dulness would be elicited about the umbilicus if the conductor was placed over the 3d or 4th thoracic vertebra different than if it wer placed over the 10th, 11th, or 12th thoracic vertebrae. This is entirely wrong, as I never intended to giv any such impression.

To show how some doctors misconstrued my work, I might say that one doctor, in attempting to illustrate this, said that if anybody placed the conductor over the 3d and 4th thoracic vertebrae the energy so conducted would produce a different area of dulness according to the energy past thru this particular vertebra. It happend that on this occasion the one who held the conductor placed it over the 9th thoracic vertebra insted of the 3d or 4th. The demonstrator, not knowing that the conductor had been placed over some other vertebra, said that he knew right off what kind of energy had been past thru "the 3d and 4th thoracic vertebrae" because of the area of dulness he elicited on the abdomen. This shows that it was not the energy past thru the spine because it was an entirely different energy than he "found" or said it was; he having "made" the areas to suit his own idea.

The whole fault seems to be in the fact that a hevy percussion stroke over certain muscles or areas on the front of the body wil, within a few seconds, cause a contraction in

some other part of the anterior part of the body. I would not want to say that anyone would use this method to deceive people intentionally, but I think it is from ignorance of these fysiological effects that some physicians hav made this error, and so misconstrued my findings in this respect.

I mention this here quite at length so my readers wil not make the same mistake that some others hav regarding passing energies thru various vertebrae, as wel as giving hevy percussion strokes over various areas. If anyone is in the least doubt about this, let them place the end of their finger over certain areas on the anterior part of the body and at the same time giv a sudden stroke on the finger that is pressing against the body. They wil find that within one or two seconds an adjoining area wil hav become dul. They can demonstrate this by immediately using *air-colum* percussion over the area.

LOCALIZING LESIONS

If a person givs an *A*-MM VR and does not giv a *B*-MM VR, we ar sure that person is suffering from activ tuberculosis somewhere in the body.

As far as the hygienic mesures go, they would be the same no matter where the lesion might be, but for local treatment it is wel to know, if possible, the location of the lesion.

In bone or joint tuberculosis, symptoms wil generally point to the location. A tuberculous lesion in the mediastina is not so easily located by ordinary methods unless it has become calcareous, when an x-ray examination wil usually make it plain. I hav very little faith in the x-ray for locating an activ lesion in this location. The treatment for tuberculosis in the mediastina would be the same as for treating tuberculosis in the lungs.

If there ar no indications as to where the activ lesion in the body might be, I make it a point to use the radiant light over the chest whether the x-ray shows any lesions there or not.

Never depend upon the x-ray for proving or disproving the B-D-C diagnosis. Some hav made this error and I wil speak more about it when discussing the x-ray. Many activ lesions in the lungs do not show up at all with the x-ray, while others do. If the person givs an *A*-MM VR, do not worry about the location of the lesion, but at once commence treatment for activ tuberculosis.

There is a B-D-C method of locating a tuberculous lesion, but it is quite difficult to explain this without a practical demonstration. The following explains it:

Wherever there is an activ lesion of tuberculosis or cancer or pus formation, there is enhanst activity, and with the enhanst activity there is an enhanst emanation from the body at that location. It is on the same principle as putting a hot lamp under a sheet of metal. Directly over that lamp

there wil be emanations of heat which can be seen by looking across the plate in the correct manner. That shimmering over the plate at the site of the flame is a *manifestation of what is going on at that location—the location of energy.*

In the chapter dealing with Magnetic Atmosfere or Aura, I go into this energy emanation quite fully, but to make this part of the book complete, I must briefly touch on *the location of a lesion by means of surface emanations.*

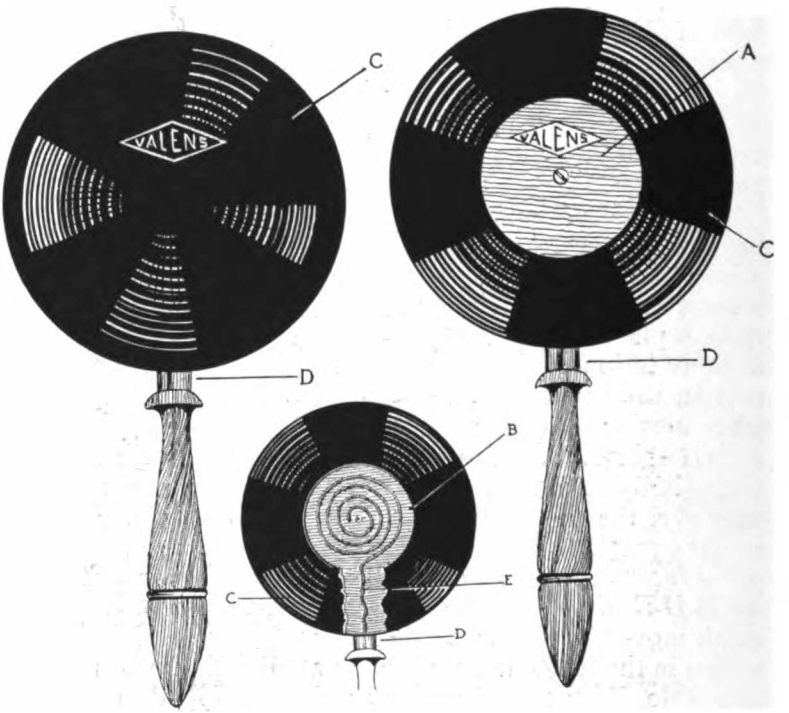


Fig. 136 Fig. 138 Fig. 137

Showing Valens Energy Intensifier or shadow disc for localizing lesions. *A* is an aluminum plate screwd fast in a depression *B* in a hard-wood jet black disc *C*. *D* is a brass ferrul connected to the resistance wire *E*.

Figs. 136, 137 and 138 represent my latest *energy intensifier,* or what I used to call my "shadow disc." The disc part is made of jet black wood with a dul finish. Fig. 136 shows one side of the disc and Fig. 137 shows the

other side. Fig. 138 shows the internal arrangement under the aluminum disc, *A*. *D* represents a brass ferrul. In the depression *B* is placed the hevy aluminum, disc *A* which covers the specially made resistance wire *E*. This resistance wire *E* is in contact with the aluminum disc *A* and the brass ferrul *D*.

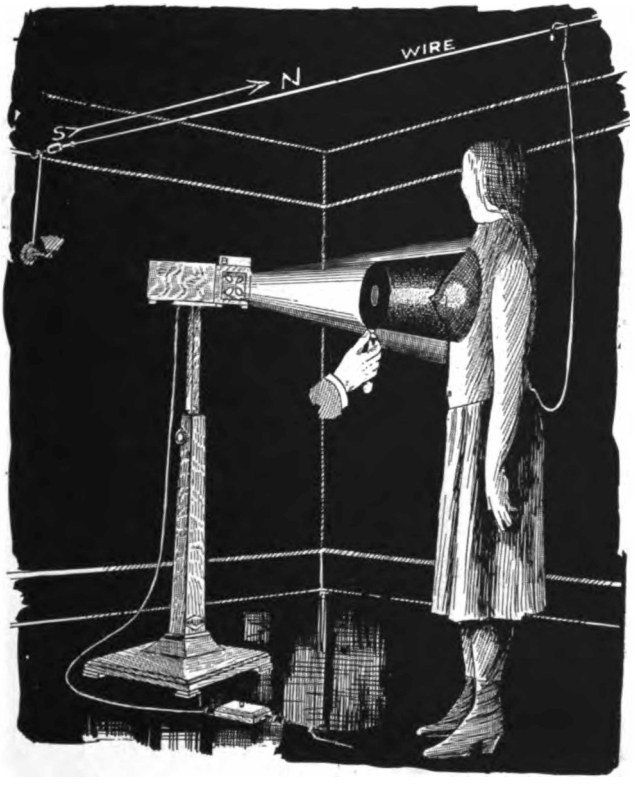


Fig. 139. Showing Valens Energy Intensifier in use. The patient is facing north or south and the same screen is radiating on the bare chest and abdomen as elicited the MM VR. The light spot in the shadow on the left brest shows where the lesion is.

As before mentiond, I hav found that human energy past thru aluminum is negativ, while that past thru brass is positiv. The fact has also been mentiond that unlike energies attract each other while like energies repel.

Energy from the body emanating against the aluminum disc *A* is attracted by human energy in contact with the brass ferrul *D*. The resistance wire *E* inhibits the flow of energy from its source to a capacity and therefore causes a storing up or "clumping" of energy about the aluminum disc *A*.

Fig. 140. Showing tecnic for using the Valens Energy Intensifier. Notis that the operator is grounded and thum on brass ferrul.

The tecnic for using this device is illustrated in Figs. 139, 140 and 141. If a person has an *A*-MM VR, a shade of a bluish hue is notist opposit the energy intensifier. Now,

if the operator presses his thum firmly against the brass ferrul *D*, a distinct aura or emanation wil be seen coming from the body of the patient toward the aluminum disc. If this disc is opposit a *tuberculous lesion*, it wil show as a

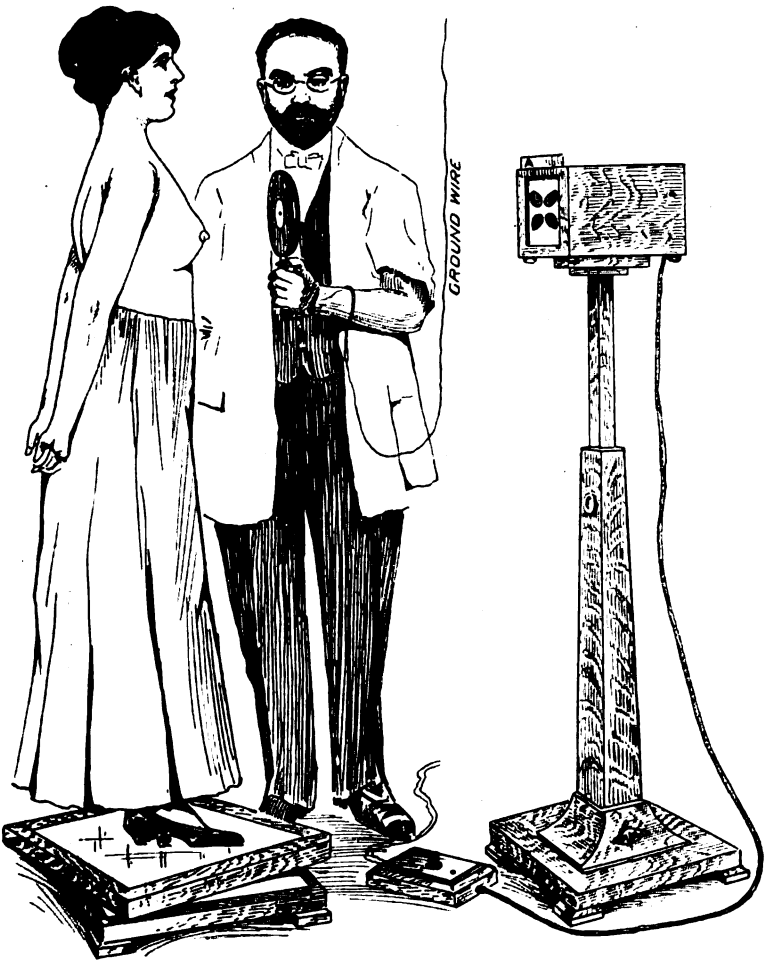


Fig. 141. Showing tecnic for using the Valens Energy Intensifier. Notis that operator is grounded and thum on brass ferrul.

reddish color, and the intensity of it wil depend upon the activity of the lesion. The body of the operator is the capacity and after a little practis the emanation can be seen

to "clump" and recede from the disc when the thum is placed on the brass ferrul and then removd.

This is a very accurate method of locating a lesion, no matter where it is in the body. In fact *there is no method that can be compared with it after one becomes proficient with the tecnic.*

After the lesion is located in this manner, then by air-colum percussion or by tapotement, using a felt piano-hammer the same as is shown in Fig. 58, one can very easily verify an advanst lesion in the lungs. Of Course in the mediastina it would be impossible to locate it by percussion.

If the patient givs a *B*-MM VR, the radiation on the body should be thru the *B*-Chromatic Screen. (Fig. 139 shows this.)

If the patient givs a *C*-MM VR, and one wishes to locate a syfilitic lesion, the radiations should be thru the *C*-Screen.

The shadow on the body wil be the complementary color to the screen used, but the color of the emanation wil show in contrast similar to the color of the screen used.

I hav often located lesions for physicians by this method and hav shown it to large classes, and nearly everyone can, by this method, locate the lesion themselvs without any suggestion from me. The location of the lesions has been verified by x-ray or any other method a person might wish.

There is nothing "mysterious" about this method of locating a lesion. It is fysics pure and simple, but it requires quite a refind tecnic which requires some practis to master. *If one has cultivated the faculty of observing Aura or the Magnetic Atmosfere, they wil be able to locate a lesion in this manner almost instantly.*

As before mentiond, energy can be conducted either by auto-excitation or subject-excitation from any lesion, and the nature of that lesion can be interpreted by means of the Chromatic Screen from which light is radiated that dissipates this lesional energy.

(Figs. 96, 97, 98 and 99 illustrate this.)

Grounding of Patients in Localizing Lesions

Fig. 139 shows the patient grounded. One can experiment with this tecnic, for at times and with some patients, the localized lesion shows better if the *operator* is grounded

and not the patient (Figs. 140 and 141). The reason for this is that the capacity of the operator is increast by grounding himself and having the patient not grounded. After a little practis one can judge as to whether grounding the patient for this energy localizing helps him or not, or whether it is plainer if he himself is grounded.

A PUPILLARY FENOMENON

The following fenomenon can hardly be cald a reflex. I discoverd it while studying the iris.

With the patient facing east or west, hav him look strait at your nose. Shed a bright light from an ordinary tungsten lamp, with a reflector, on his eyes and both pupils wil be seen to immediately contract. Leave the light on until the pupils begin to dilate. If one dilates more than the other within a half minute, the disease of whatsoever nature it may be, is on the corresponding side of the body. A tuberculous lesion in the lung or in any of the joints, a cancerous growth, a pus tube, an inflamed ovary, etc., on one side of the body, wil usually giv this pupillary fenomenon on the corresponding side.

This aids very much in locating the diseasd area for diagnosis.

If a person has tuberculosis in both lungs but more in one than the other, this pupillary fenomenon wil be observd on one side where the disease is the more activ. If the disease is equally activ on both sides, the pupils wil dilate more rapidly than normal after the light is shed on them, but the dilation wil be equal .

Since mentioning my discovery of this fenomenon in lectures and since writing about it, many physicians hav written me regarding it. Not a few hav told me that they had observd this same pupillary fenomenon, but had never classified it nor studied out *why* it was.

If all observers in fysical and fysiological fenomenon would serch out the "whys and wherefores" of their observations, much knowledge would be gaind.

REVIEW QUESTIONS AND ANSERS IN BIO-DYNAMO-CHROMATIC WORK.

The following is a list of questions which covers nearly all the practical part of Bio-Dynamo-Chromatics containd in this book.

1. *What is the meaning of the term, Bio-Dynamo-Chromatics?*

Bios means life; Dynamis means force; Chroma means color; Hence the meaning of the term is self-evident.

Bio-Dynamo-Chromatic Therapy is treating diseases by means of the life force and the erth's finer forces along with radiant color.

Bio-Dynamo-Chromatic Diagnosis means the diagnosis of disease by the same means.

B-D-C is the abbreviation for Bio-Dynamo-Chromatics.

2. *Who first discoverd the underlying principles of Bio-Dynamo-Chromatics?*

As far as I am able to lern, I discoverd them when studying natural fenomena and the power of orientation in birds and other animals. My first observations of the laws governing B-D-C work were made over forty years ago.

3. *What is ment by the term, aura?*

I understand that the word, aura, as used by the "ancients," means the manifestation of vital force—that is, surface emanations from the body which depict internal body energy whether it be fysical or metafysical.

Aura has been written about under many terms, some of them being life atmosfere, human atmosfere, the ego, and spark of life. In reality I presume the best meaning would be "Any subtle, partially invisible emanation or exhaltation from the body."

The origin of the word is from the Latin word meaning air, but the Hindu authorities insist that it had its origin in the Sancrit root *Ar* which means the spoke of a wheel, because the human aura radiates from the body of an indi-

vidual similar to the radiation of the spokes of a wheel from the hub.

The Latin meaning, *"aerial emanation,"* is probably the best for some purposes.

This ethereal radiation or emanation surrounds each and every human being and every *living* thing, vegetable or animal. Because of the metafysical significance of aura, some writers hav cald it the "psychic atmosfere" of a person or his "magnetic atmosfere."

More is said about aura in my lecture on aura, Part Ten.

4. *Has B-D-C work anything to do with aura or surface energy from the living body?*

Yes, the fysics underlying B-D-C work giv fysical proof that there is such matter as animal aura or life emanations —a magnetic atmosfere.

5. *Must one be able to observ the human aura in order to be able to use B-D-C work in diagnosis?*

No. I hav developt the B-D-C work entirely on a fysical basis independent of my knowledge of the aura. The fact that the underlying fysics of both Bio-Dynamo-Chromatics and aura ar nearly identical, excludes what has been cald "hypothetical" in the study of aura.

If anyone is gifted with the "seer's sight," he wil at once grasp the underlying principles of Bio-Dynamo-Chromatics in diagnosis and therapeutics.

6. *What is the magnetic meridian?*

An imaginary "line" of positiv energy traveling from the south geografical pole over the erth to the north geografical pole and back again thru the center of the erth as negativ energy to the starting point.

While this definition may not be complete, it is complete enuf for explaining the underlying fysics of my B-D-C work.

7. *What is energy?*

The power by which anything acts effectivly to move or change other things or accomplish any result; force; potency; capacity for performing mecanical work.

8. *What is radiant energy?*

Force that radiates thru space, whether it be "vacant" space or occupied. For example, radio-activ energy; radiant-light energy; magnetic energy.

9. *How can one prove that the magnetic meridian is a radiant energy?*

The fact that it directs the magnetic needle or compass proves that it is energy, and if it has an effect upon steel and some other metals, it must also hav an effect upon *all* matter.

10. *What is a magnetic substance?*

Works on fysics say that any substance that is attracted by a magnet is a magnetic substance. Iron is mentiond first, then nickel, cobalt, and manganese. Faraday showd that there ar a great many other substances which ar also "magnetic."

11. *What is a diamagnetic substance?*.

Any substance which is repeld insted of being attracted by a magnet. Bismuth is the most noteworthy.

12. *What is a paramagnetic substance?*

Any substances such as nickel, platinum, oxygen and ozone that ar attracted at times by magnetic energy and at other times ar repeld.

Some substances, such as iron and cobalt, become paramagnetic when they ar heated above their critical temperature .

13. *What is the best way of testing any substance to find whether it is charged with magnetism or not?*

Place it at right angles to a sensitiv compass needle. If there is a deflection of the needle, magnetism must be present in the substance, or it must be magnetic.

14. *Ar any liquids affected by magnetism?*

Yes. Under a suitable observation telescope, the surface of water can be seen to change its form when influenst by powerful magnets. The blood has the same property. No doubt every substance known is affected by magnetism and consequently by the magnetic meridian, whether we ar able at present to demonstrate the fact or not.

15. *How can one prove that the magnetic meridian has an effect upon the human body?*

By placing a normal, helthy individual in a dark room, grounding him and turning him about so he faces from east or west to north or south. At the same time palpate both pulses simultaneously on a level with the hart. There wil be a change of tension in the vascular system, which anyone can demonstrate to his entire satisfaction after a very few minutes' practis.

16. *What ar some other means of demonstrating the effect of the magnetic meridian on the helthy person?*

By placing large seashels over both ears while in a dark room, grounded, and facing from east or west to north or south. There wil be a change in the roar, which is produced by a change of tension in the middle ear.

There ar many other ways of demonstrating this change in tension and they wil be mentiond later.

17. *Why should the person be grounded in making these tests?*

To put the body in static equilibrium.

18. *What metal should be next to the skin to ground the individual?*

Aluminum because it holds its surface condition better than most other metals, and from the peculiar "magnetic" effect that aluminum has upon the skin, and because it is easily kept clean.

19. *Can any other metal be used for grounding?*

Yes, any kind wil do if only one person is being grounded at a time. If more than one person is being grounded, the metal that touches each one should be the same, preferably aluminum.

20. *Why should the person be in a dark room while demonstrating the effects of the magnetic meridian upon the body?*

Because light is energy, and every energy acts upon every other energy. Therefore the darker the room, the greater the effect of the magnetic meridian upon the body.

21. *What other precautions should be taken besides having the room dark and the subject electrically grounded, when demonstrating the effect of the magnetic meridian upon the body?*

There should be no magnets in the room where the tests ar made. If they ar in the room, they must be lying flat on the floor, because if magnetic energy, no matter how delicate, is directed toward the solar plexus of an individual, it temporarily affects the nervous system and therefore changes the action of the magnetic meridian.

22. *What is ment by MM?*

MM is the abbreviation for magnetic meridian.

23. *What is the sympathetic-vagal reflex?*

The reflex produced by stimulating the sympathetic-vagal system.

24. *Why is it not just as wel to call it a sympathetic reflex as a sympathetic-vagal reflex?*

Because I am not sure that the sympathetic alone produces these results. Neither am I sure that the vagus nerv produces it by itself. By calling it the sympathetic-vagal reflex, I am making the term broad enuf to be safe.

Then, the fysical reason for this reflex must be primarily thru the sympathetic nerv and secondarily it is probably thru the vagus.

Therefore the term, sympathetic-vagal reflex seems to be logical.

25. *What is the abbreviation for the sympathetic-vagal reflex?*

VR.

26. *What is meant by MM VR?*

MM VR is the abbreviation for the magnetic-meridian-sympathetic-vagal reflex, that is, the sympathetic-vagal reflex elicited by the energy from the magnetic meridian.

27. *How would you name a sympathetic-vagal reflex elicited by any other energy than that of the magnetic meridian?*

By designating the kind of energy that elicited it. For example, magnet-VR; human-energy-VR; light-VR; color-VR; sound-VR; etc. Or one can say the VR elicited by such and such an energy.

28. *What position should the body be in when demonstrating the elicitation of the VR?*

Standing erect, facing straight ahed or looking downward.

29. *Why should the hed be in this position?*

Because extending the neck, that is looking up at the ceiling, stimulates the sympathetic thru the cervical ganglia and elicits a VR; for example, yawning and stretching.

30. *What is ment by dual-puls tecnic or system?*

Taking the two radial pulses simultaneously, the arms being on a level with the hart.

As far as I know, no one has ever previously described this method of taking the two pulses. It is infinitly superior to taking the puls from one rist only. The slightest change in vascular tonicity can be detected by means of the dual-puls system.

31. *What is air-colum percussion?*

Percussion thru a colum of air.

32. *What ar the advantages of air-colum percussion over the old style methods?*

With the old style methods of percussion the finger lies hard against the skin and that changes the tension of the skin and that changes the note.

33. *W'hat ar the laws governing air-colum vibration?*

a. The pitch of a vibrating colum of air, its length being constant, varies directly with the tension of its limiting ends. For example, a violin string is one end of a vibrating colum, and the belly of the violin is the other. If the string is made tighter the pitch is raisd and if it is slackend, the pitch is lowerd.

b. The pitch of a vibrating colum of air, the tension of its limiting ends being constant, varies inversely with the distance between the limiting ends. For example, a tambour vibrated over a table top has a lower pitch if it is three inches distant from the table top than if it is only one inch away.

All musical and other tones and even the voice, ar modifications of these two principles in air-colum vibration.

34. *W'hat is the tecnic of air-colum percussion?*

a. Dust talcum powder or French chalk on the part to be percust.

b. Hyper-extend the fingers of the pleximeter hand and hav them wide apart.

c. Let the ball of the pleximeter finger just touch the lanugo hairs but *make no pressure.*

d. Hav a celluloid thimble fild with beeswax and fine shot on the plexor finger.

e. Strike the hyper-extended pleximeter finger a firm staccato blow between the middle and distal joints of the finger.

35. *How is this plexor thimble made?*

Take an ordinary celluloid thimble that wil fit the index finger of the plexor hand. Smooth off the end with sand paper or a file. Fil it about half ful with melted beeswax. *After that,* pour in "dust shot" or the finest bird-seed shot so as to hav the shot come to the top of the wax.

As soon as the wax cools sufficiently, place the pleximeter finger into it, holding the nail close to the thimble. Press out surplus wax and shot and let the wax cool on the finger, after which withdraw the finger and trim off the wax on the outside.

36. *What is the working line?*

The working line designates the point of maximum dulness in any given area that is being percust.

37. *Giv the tecnic for obtaining the working line over the abdomen.*

With the patient standing facing exactly east or west, grounded with metal to the skin and in a subdued light, begin percussing by means of the air-colum method from the pubes up and on the left side of the linea alba.

Hold the pleximeter finger horizontally, hyperextended and fingers wel spred apart. Strike the pleximeter finger about two times a second while going from the pubes up toward the umbilicus.

Various notes wil be determind but when the *maximum* dulness in that area is reacht, stop and with a soft pencil mark on the skin on a level with the under side of the pleximeter finger. This line is the working line.

38. *Can the working line be obtaind in other parts of the body?*

Yes. On the right side of the linea alba between the level of the umbilicus and the liver border; at the liver border; over the greater curvature of the stomac; below the pericardium; at the apex of the hart; at the axillary border of the hart; below the spleen; and below each kidney; to the left of the gall bladder; and some other locations.

39. *What is the reflex line?*

The reflex line designates the point of maximum dulness in any given area when the VR is elicited.

40. *How is the reflex line obtaind?*

By having the person face exactly north or south and repeating the maneuver given for obtaining the working line.

41. *Ar there any other methods of eliciting the reflex line?*

Yes. By eliciting the VR in any other manner. For instance by pointing a magnet toward the epigastric region, or by directing other suitable energy toward the epigastric region while percussing as outlined for obtaining the working line.

42. *What does it indicate if a patient is facing directly north or south and one cannot obtain a reflex line, that is, the point of maximum dulness comes at the same place as it did when the person was facing east or west?*

It indicates that the person has some toxemia, such as tuberculosis, syfilis, auto-intoxication, malaria, gonorrhea, jaundis, influenza, tonsilitis, etc.

43. *How then can one obtain the reflex line in a person having any of these toxemias?*

By shedding color upon the bare chest and abdomen of the person being tested while they ar facing exactly north or south, grounded, and in a dark room.

44. *Wil all radiant colors hav the same effect?*

No. If a person has tuberculosis, energy radiated thru the *A*-Chromatic Screen wil elicit the MM VR, and the reflex line wil be obtaind.

If the person has cancer, light radiated thru the *B*-Chromatic Screen wil elicit the MM VR, and so on; each different screen designating the disease affecting the individual.

45. *What reason can you giv for this remarkable fenomenon?*

Each color has its own individual rate and mode of motion. Each diseasd condition of the body causes the surface emanations (vital force, aura, or whatever it may be cald) to be different.

The abnormal emanation from the body inhibits the effects of the magnetic meridian upon the body. Consequently any radiant energy, such as radiant color, possessing a rate and mode of motion to interfere with the abnormal rate and mode of motion from the body, wil temporarily normalize the abnormal energy from the body and allow the magnetic meridian energy to elicit the reflex.

46. *Why must the body be facing directly north or south when eliciting the VR by means of radiant color?*

Because a person with a normal MM VR responds to the magnetic meridian, but if their emanation is abnormal, that is from any diseasd condition, the magnetic meridian does not elicit the VR. Consequently some other energy must be radiated on the body to so "block" or neutralize the abnormal energy as to let the magnetic meridian energy act.

47. *How do you know that this is a reflex?*

Because this change of abnormal energy to normal wil last for only a few minutes when the abnormal condition again takes place.

48. *What is a reflex?*

A reflex is an involuntary movement caracterized by a temporary change in a rate and mode of motion without the necessary intervention of consciousness.

49. *Why must the chest and abdomen be bare while eliciting the MM VR by means of radiant color?*

With some individuals a fairly good reflex can be elicited without baring the entire chest and abdomen, but with others it is imperativ, as the color emanations seem to be needed on the skin itself to elicit the MM VR. It is for that reason that I make it a rule to hav the chest and abdomen bare when eliciting the MM VR by means of radiant color.

50. *How can you explain this fenomenon of the magnetic meridian eliciting the VR?*

a. The sympathetic nervs radiate laterally from the spinal cord in the posterior part of the torso. In so doing they present a wide area of "live wires" when the body faces north or south, but when the body faces east or west they present a very small area to the energy of the magnetic meridian.

b. As the magnetic meridian is magnetic energy and as nerv force is also a form of magnetic energy, one energy cuts the other; and in cutting nerv energy, the magnetic meridian energy changes the energy in the body so as to act upon the vaso-motor system thus eliciting the change of tension in the body which I call the sympathetic-vagal reflex.

This fenomenon is wel illustrated in the following manner. Suppose we liken the magnetic-meridian energy to the wind blowing from the north or south. Suppose we liken the sympathetic nerv in the body to a sheet of paper about fifteen inches wide. When that paper has its edges directed north or south the wind has very little effect upon it, but when the piece of paper is turnd so that its surfaces ar directed north or south much stress is brot to bear on the paper.

51. *What is an electric Bio-Dynamo-Chrome?*

It is a box containing an electric light in front of which is placed the Chromatic Screens thru which the light is radiated.

52. *What is the abbreviation for the electric Bio-Dynamo-Chrome?*

B-D-C.

53. *Why is an adjustable pedestal useful in using the B-D-C?*

So it can be lowerd or raisd to allow the radiant color to shine directly upon the epigastric region.

54. *Why is a foot switch necessary in doing B-D-C diagnosis?*

So the light can be turnd on and off by means of the foot without having to change one's position in front of the patient and because the magnetic-meridian energy acts almost instantaneously with some individuals; and that sudden change in tension is lost if one has to use his hands for operating an electric-light switch.

55. *Why is a turntable advantageous in doing B-D-C diagnosing?*

So the patient can be turnd from east or west to north or south without any voluntary motion on their part.

It also allows the operator to turn the body exactly where he wants it.

56. *Why is it not advizable to hav a grounded metal plate on which to hav the patient stand?*

Because many shoes hav rubber soles or felt insoles, thus insulating the body. It takes much time and unnecessary effort on the part of the patient to take off the shoes and stockings and stand with their bare feet on a grounded plate.

57. *What other factor enters into the arrangement of the room for doing B-D-C diagnosis?*

The room must be quiet. One cannot do B-D-C diagnosis by the side of a clanging elevator or rumbling street cars. The noise not only interferes with and changes the equilibrium of the VR, but it makes the differentiation of tones over the body imperceptible.

58. *Suppose a person on the spur of the moment has to diagnose a person where there is more or less noise, what would he do?*

Take the patient into a pitch-dark room, ground him, and diagnose him by means of the dual puls insted of by air-colum percussion.

59. *Why, then, is not the dual-puls method better than air-colum percussion for doing the B-D-C diagnosis?*

It is an auxiliary, but I do not believe in using just one method for determining the VR.

Air-colum percussion allows the physician to determin the position of the organs in the body and also to lern if there is any splancnic insufficiency. It also enables him to determin many other factors that cannot be determind when the body is entirely coverd.

60. *How does air-colum percussion determin splancnic insufficiency?*

By observing the different levels of the working line on both sides of the abdomen. The difference in the level

between the working line on the left side and on the right side indicates the degree of splancnic insufficiency, that is, the relaxation in the splancnic vessels.

61. *Ar these two working lines ever on the same level?*

Yes, in all normal children and in a person up to the time they ar eighteen or twenty years old, provided they hav not had to do hevy work while standing.

In nearly all individuals who hav had to be on their feet a good deal and who hav past the twentieth birthday, there wil be a difference in the level of the working line on each side of the median line near the umbilicus.

62. *Wil the dual puls show this insufficiency in the splancnic area?*

Yes, the greater the difference in height of the peak of the two pulses, the greater is the splancnic insufficiency.

63. *Does a person always hav ptosis when they hav splancnic insufficiency?*

No. A person can hav splancnic insufficiency without ptosis, but they cannot hav ptosis without splancnic insufficiency.

64. *How can you prove mathematically that the magnetic meridian changes the tension in the splancnic vessels?*

By means of a specially arranged drum which I call the "practis drum." A certain change of pitch wil be observd when the tension in this drum is changed when a horn is blown over it. For example, as the flexible drumhed is changed in tension by either increasing or diminishing the pressure of the air within the drum, the pitch rises.

This same pitch obtains when the same horn is sounded over the body as it is turnd from facing east or west to north or south.

The rule of mathematics is, if a+b=c and a+x=c, then x must = b. Therefore the result being the same, the causes in this experiment ar naturally the same.

65. *Is there any difference in the blood pressure of a normal individual when he faces from east or west to north or south?*

Yes. After making hundreds of tests, I hav found that every normal individual has a different blood pressure, taken on the same instrument and in the same manner, when he is facing east or west than when he is facing north or south, provided the test is made when the patient is grounded and in a dark room.

66. *What is the fundamental law in magnetics?*

Like poles repel and unlike poles attract each other.

67. *What is the polarity of the north geografical pole?*

Negativ.

68. *What is the polarity of the north-seeking pole of a magnetic needle?*

Positiv.

69. *If, for example, we know by chemical tests that the north-seeking pole of a magnetic needle is positiv, why should we know by that fact that the north geografical pole is negativ?*

Because unlike poles attract each other.

70. *If we know the polarity of one end of the erth or any piece of metal or other substance, how can we from that knowledge know the polarity of the other end?*

If one pole is positiv, the other must always be negativ, and vice versa.

71. *How can polarity hav anything to do with stability in helth?*

When the body is in natural equilibrium, there must be as much negativ electricity as positiv electricity.

If the body is not electrically balanst in any part, there is unrest of tissue which is the beginning of *dis*-ease. When this change of polarity or instability in magnetic energy is far enuf involvd, or has obtaind too long a time for the body to quickly stabilize itself, disease in a lesser or greater degree ensues.

72. *How can we prove that colors hav polarity?*

By the manifestations of their energies. All fenomena ar known only by their manifestations, and the only way we know that one energy resembles another is by its manifestations. For example, red light is irritating. Negativ electricity is irritating. Blue light is sedativ. Positiv electricity is sedativ.

Another way of demonstrating the analogy between colors and polarities is from the fact that negativ electricity, if directed in a certain manner in front of a normal individual, facing exactly north or south, will temporarily inhibit the effect of the magnetic meridian on the body. Dark-room-ruby light when shed upon the bare chest of a normal individual, grounded and facing exactly north or south in a darkend room, wil also temporarily inhibit the effects of the magnetic meridian upon the body.

Another remarkable demonstration of the analogy between color and polarities is the fact that ointments, for example, with the same ingredients, but one red and the other blue, wil hav an entirely different effect upon some sores. The sore that givs off energy dissipated by the positiv pole is heald by a blue-colord ointment, and one which givs off energy dissipated by the negativ pole is heald by a red-colord ointment. In these two instances the opposit color wil hav no effect toward healing the sore.

73. *What is ment by auto-excitation?*

Conducting energy from one part of a person's body to his own epigastric region for eliciting the VR.

74. *What is the tecnic for auto-excitation?*

The individual must be grounded in a darkend room and be facing exactly east or west.

By means of an energy conductor the energy is conducted from the brest, for example, to the epigastric region; and if this energy elicits the VR it can be demonstrated by means of the reflex line, the working line having been obtaind before the energy was conducted to the epigastric region.

The color radiating upon this individual's bare chest and abdomen that wil dissipate this VR designates the "polarity" or the caracter of the energy being conducted.

75. *What is subject-excitation?*

Subject excitation is conducting the energy from some designated part of one person to the epigastric region of another to elicit the VR, following out the tecnic as described under auto-excitation.

Both individuals, that is, the one from whom the energy is conducted and the one in whom the VR is elicited, must be grounded to the same kind of metal, preferably aluminum, and each face east or west.

The differentiating color should be radiated on the subject.

76. *Why must the air in the B-D-C diagnosing room be free from exciting odors?*

Because odors such as those from tobacco, cloroform, or ether wil often inhibit or change the VR in an individual so as to make it entirely unreliable. Therefore the air must be pure; and the fresher the air, the better.

77. *What is ment by the aerial wire in the B-D-C room?*

The piano wire that is strecht across the room and grounded to a gas, water, or steam pipe. This wire is preferably placed so as to run exactly north and south, and with a turnbuckle at one end of it so as to make it taut.

78. *Why does the energy from a trolly car under stress sometimes elicit the VR in an individual?*

Because under stress the car is giving off magnetic energy which radiates out several hundred feet; and magnetic energy is a rate and mode of motion and affects the VR in many individuals. The magnetic energy from the trolly does not affect a compass needle when it is three or four stories higher than the trolly.

79. *Can the x-ray demonstrate the MM VR?*

No, because the x-ray itself is an energy and therefore it cannot demonstrate any other energy which would elicit the VR. The same can be said of radium or radio-activ energy of all kinds.

80. *Does the color, complexion, or race of the patient hav any effect upon the B-D-C work?*

No. The chemical changes in the retort create the energy and not the retort itself.

81. *Is it necessary to ground other persons who might be present in the examination room where the B-D-C system is used?*

It is not always necessary, but is often advisable. Husband and wife, or blood relativs, or those with affection for each other, should be grounded.

82. *Why is this necessary or advizable?*

After you hav studied the chapter on Magnetic Atmosfere, or Aura, you wil see that we ar dealing with a force that is influenst by affection, or family ties. The energy from some husbands wil influence the energy from wife, but not in all cases. The temperaments of some ar not the same as that of others tho they may be as loyal.

83. *Then is it not a good plan to ground any one who may come with a patient to be diagnosed?*

To be on the safe side I think it is a good plan. It is a simple procedure and makes the work more uniform.

84. *How is it best to do this grounding of those not being examind?*

Hav several grounding wires always on hand. The patient of course wil be grounded—preferably to aluminum —and it is very easy to throw another static grounder over the main grounding wire, water pipe, gas pipe or steam pipe

and attach the hook to the neck, hand, or wrist of the spectator.

84a. *Suppose one had no extra grounder, or only one extra one and three or more persons came with the patient to see her diagnosed, how would you manage?*

If one person is grounded, another can take hold of his hand, another can take hold of the second person's hand, and so on. If one takes hold of the radiator or the faucet he is grounded and every one who touches the skin of the person grounded is also grounded.

85. *What is the polarity of vital force past thru aluminum, as demonstrated by a very delicate, specially constructed galvanometer?*

Negativ.

86. *What is the polarity of vital force past thru brass as demonstrated by such a galvanometer?*

Positiv.

87. *Knowing that like poles attract and unlike poles repel, what effect would you consider placing the thum or finger in contact with brass would hav upon an aluminum plate connected with the brass?*

It would attract energy that was emanating toward the aluminum.

88. *To what practical use could this fysical law be put?*

Intensifying energy from a lesion so as to determin its nature.

89. *What is the Valens Energy Intensifier?*

It is a black wooden disc into which is set an aluminum disc. The handle of the disc has a ferrul on it made of brass, and the brass is electrically connected with the aluminum by means of a special resistance wire.

90. *What is the tecnic for using this energy intensifier?*

When casting a shadow made by the Chromatic Screen that elicits the MM VR on the patient being examind, the energy from the body is attracted toward the aluminum plate when the thum or finger of the operator's hand is prest against the brass ferrul.

The color of the emanations that try to rush thru the aluminum plate to the brass ferrul indicate the caracter of the lesion.

91. *How can this be explaind?*

Each different kind of lesion has its own peculiar rate and mode of motion which is manifested by energy emanations or a magnetic atmosfere. This energy being attracted

by and intensified about the aluminum disc makes it more plain to the observer than if it were not so intensified, and the shadow on the patient intensifies the color by contrast.

92. *How can one prove that the lesional energy so demonstrated is of the same caracter as the toxemia that inhibits the normal MM VR?*

By conducting the lesional energy to the patient or a subject, as in auto-excitation or subject-excitation. If the same color radiation dissipates the lesional energy as elicits the MM VR, we ar safe in presuming that we ar taking the energy from a lesion of the same caracter as that which causd the toxemia.

93. *What part of this energy conducting tecnic must be rigidly observd?*

The patient or the subject and patient must invariably be grounded to the same metal, preferably aluminum, be in a subdued light, and *must face exactly east or west.*

94. *How long does it take to so exhaust the reflex that a reliable MM VR cannot be obtaind?*

It depends upon the patient. The sooner the reflex is obtaind and the patient is allowd to sit down, the better. If, however, a prolongd examination is necessary, let the patient sit down occasionally during the examination, but face exactly east or west. Or if the patient is facing north or south and has a normal MM VR, the ruby light shed upon the body wil hav the same effect in resuscitating the normal reflex as turning the patient to face east or west.

95. *Does one generally get the correct findings with the first trial of a screen?*

Yes, provided the bowels ar not impacted. It is wel, if one finds the bowels ar very constipated and hav not movd for two or three days, to defer the examination until the bowels ar thoroly cleard out.

96. *Can the B-D-C examination be made on a woman while she is menstruating?*

Yes, but if there is any doubt as to the findings, hav her come for another examination two or three days after she has finisht menstruating.

97. *Can the B-D-C tests be made on a pregnant woman the same as if she wer not pregnant?*

Yes, because the relativ changes in tonicity wil be the same and all reflexes ar relativ. That is, a finding is obtaind when a person is facing east or west, and the patient is in the

same condition when the findings ar obtaind while they ar facing north or south.

98. *How long, as a rule, must the radiant light shine upon the patient's bared chest and abdomen before reliable reflexes can be elicited?*

This depends upon the patient. A flegmatic person requires a longer time than a nervous person. As a rule, it never requires over sixty seconds altho I hav had some patients with whom it required three minutes. One can very quickly judge by observing temperaments.

99. *Suppose the patient is nervous and no working line or reflex line can be obtaind, what is the procedure?*

Shed radiant light thru the *X*-Screen upon the body. Get their mind off themselvs by talking on various subjects. Let them rest for a few minutes while facing east or west, then procede again. It is only with hysterical patients that we ar liable to hav any trouble, and they can be handled by suggestion quite redily after a little practis.

100. *Can a patient be so weak that it is impossible to elicit the MM VR?*

Yes, if the patient is very much emaciated and very weak, he must be examind with great rapidity if examind while standing; or he must not be examind at all by the B-D-C method unless it is by subject-excitation. When using subject-excitation, the patient can sit upright in a chair and energy from suspected lesions tested. Some of my most important diagnoses hav been made in this manner when patients wer unable to even sit up.

101. *If one does not get a reflex line two or three fingers' bredth below the working line, does it indicate that there is some mixt toxemia and that some special screen of the Crescent Series would elicit a reflex line three fingers' bredth below the working line?*

Yes, as a rule this holds true, but for all practical purposes if one givs an *A*-MM VR and not a *B*-MM VR, the diagnosis of tuberculosis can be made.

If, however, one is fitted up for doing the B-D-C work on a more extended plan, they can pick out a screen of the Crescent Series which shows complicated conditions with tuberculosis and often elicit a reflex line two fingers' bredth lower down that they would with just the *A*-Screen.

102. *If one gets a reflex line two or three fingers'*

bredth below the working line, does it indicate that there is no mixt toxemia?

Yes. When one can obtain a reflex line two or three fingers' bredth below the working line, it generally indicates that it is a single intoxication and not complicated with others.

103. *How can you differentiate a streptococcic or a stafylococcic infection from tuberculosis or syfilis as far as the screens ar concernd?*

From the general condition. If a person has a streptococcic infection, the symptoms wil show it, and if they hav stafylococcic infection, the general condition wil show it. Besides the focus of infection is usually wel markt.

These cases ar so rare in comparison with tuberculosis or syfilis that one does not hav to concern themselvs about them.

104. *How is it that in the Crescent Series there ar several different screens having the same indications?*

Because no two individuals ar alike. These screens ar made from actual tests. A condition in Mr. Smith might call for a slightly different screen to elicit the maximum reflex than the same condition would in Mr. Jones. However, if Mr. Smith and Mr. Jones both had tuberculosis, both would giv an *A*-MM VR.

The Crescent Series Screens represent refinement in diagnosis and take in personality as wel as toxemias. A separate screen could be made for every individual examind, but it would not be of any special value. What I mean by this is that the same pathological condition wil not giv exactly the same radiations from the body any more than two faces ar alike or two dispositions ar alike.

The B-D-C system is so exact and so sensitiv that screens can be made to interpret each individual's inmost nature if life wer long enuf to carry the work to a finish. This, however, is not necessary, nor practical. The B-D-C system tels at once whether a person has tuberculosis, cancer, syfilis, gonorrhea, etc.; and that is sufficient for all practical purposes.

105. *Can energy be taken from the dried blood of a diseasd person and giv the same reaction as fresh blood?*

No. If the blood is freshly drawn, it wil giv a reaction in the same manner as the juice of fresh fruit, but when it is dried, it wil not. There ar some instances in which the dried blood, if wet with water, wil giv a reaction that wil be

dissipated by the chromatic screen which wil dissipate a lesional energy from the same patient, but I do not consider it at all reliable and would never advize anyone to depend upon it.

Remember all these reactions ar *bio*-dynamic and therefore must necessarily be taken from live material. Do not by any means put any dependence upon diagnosing bio-dynamically from specimens of blood.

106. *Can a person without any musical ear lern the B-D-C system?*

Yes, to a certain extent, but not so wel as if they had a musical ear. It was only recently that one of our largest magazines had a lengthy article in it setting forth that physicians with a traind musical ear made far better diagnosticians than those without a traind musical ear. It might be sumd up in this manner. Anyone with a finely traind musical ear is traind to be sensitiv to emotions, and anyone who is sensitiv to external energies of any kind can diagnose by any system better than those without this faculty.

I would urge every one who wishes to master the B-D-C system by all means to cultivate the interpretation of sound and to use a practis drum of some kind and follow out the directions given in this book.

I would advise every reader who wishes to review this B-D-C work to read over the twenty-three CONCLUSIONS beginning on page 77.

Also read carefully *observations* beginning on page 95, as wel as the remarks re B-D-C work on page 98.

In fact STUDY the fysics underlying all B-D-C work. *Bild a Good Foundation.*

HOW TO MASTER THE B-D-C WORK

Read PART ONE thru carefully. Then read PART TEN thru carefully. These two Parts wil giv you some idea of the *Naturalness* of the Bio-Dynamo-Chromatic system.

After reading as abov outlined, begin to STUDY Part One and LERN it wel. Try out the tecnic and *master* the simple experiments.

Don't try to "pick flaws" until you KNOW the work—then your "picking propensities" wil hav been dissipated.

REMEMBER—"He who does not advance falls back; he who leaves off givs up; the stationary is the beginning of the end."

PRACTICAL POINTS

CASE TAKING

Always record on your record card whether a patient has a normal MM VR or not.

Always record specifically on your card what screen is required to elicit the MM VR.

If energy is conducted from a lesion to the epigastric region, make a record on your card as to whether you use auto-excitation or subject-excitation.

Specify on your card exactly from what part of the body the lesional energy was taken.

Make a record as to the shape of the patient's fingers—whether long, short, or medium, blunt tips, tapering tips, or club tips. If any arthritic joints ar notist in the fingers, record it on your card.

Notis whether the finger nails ar brittle or tuf, ridgd, almond shaped, or hav white spots in them—in fact any peculiarity about them.

Note if the hair is fine or coarse, brittle, or oily, and mention the color.

Note if the eyebrows ar thin, hevy, very hevy, or bushy.

If anything peculiar is notist about the ear, shape of face, nose, mouth or chin, make a record of it. Record the general shape of the face—whether high cheek bones, sunken cheeks, florid spots on cheeks, etc.

Examin the inside of the mouth. Examin the teeth wel, Notis whether they hav a false or normal "bite." See whether their occlusion is good. Examin the teeth by the "cautery test" (FitzGerald) if you want to know whether they ar sound or wel-fild.

Under the hed of appearance, record what your general impression is—whether they ar neurotics, hav habit tics, what the general color of the skin is, whether they walk with their hands open, closed, or partially closed, etc.

In recording the puls, be sure to always record it as taken by the dual-puls system.

For the hemoglobin test, I use the Tallqvist or one similar.

The color of the eye should also be recorded.

All these little points may seem frivolous, but after a while you wil be surprized at what you hav lernd by these observations and records. You wil probably find that very few persons hav an *A*-MM VR who possess a wel-formd nose. When I say "wel-formd" I mean a nose in *good form* as to breathing capacity.

You wil also notis that more people hav an *A*-MM VR with bushy or hevy eyebrows than otherwise.

You wil also notis that the finger nails in a person with an *A*-MM VR ar very often almond-shaped.

The majority of people who hav the habit of masturbation bite their finger nails. I believe I am safe in saying that nine out of ten who bite their finger nails hav some sexual neurotic trouble.

All these little points a person can lern to observ and make a record of, and by compiling your records you wil be astonisht at the uniformity of your findings.

The following shows the front and back of my regular *Case Record Card*. I giv this here as a sample of what I use because so many hav askt me how I make records of my findings.

This record card can be of the exact size shown on the following pages, or it can be made for vertical filing in letter size. Probably the letter size is better if you hav a cabinet for so filing them. Additional and more elaborate findings may be recorded on a card the same size as sample shown here but ruled in blank.

I think it a good plan to always hav the diagnostic cards of a different color than the charge cards. I use blue for diagnostic cards and buf or yellow for charge and credit cards and white for some special records. I fasten each patient's cards all together with a clasp.

ABBREVIATIONS

The following abbreviations wil be of servis in making uniform records:

MM	magnetic meridian
FS	facing south
FN	facing north
FE	facing east
FW	facing west
N	north
S	south
E	east
W	west

A-MM VR=MM VR elicited by radiating light thru *A*-Chromatic Screen (Designate all other screens by their respectiv letters, numbers, or signs.)

Pat.	patient
Subj.	subject
Subj.-X.	subject-excitation
Auto-X.	auto-excitation
P.	P.M.
A.	A.M.
B.P.	blood pressure
S.P.	systolic B.P.
D.P.	diastolic B.P.
P.P.	puls pressure

Puls or P.R. rate of puls. (By writing the B.P. thus 150/100, the "150" indicates the S.P. and the "100" the D.P., and the difference between the two equals the P.P.)

S., M., W.	single, married, widow
S. G.	specific gravity

Date..... Referd by..... Sex.....

Name ..... Age.....

Occupation ..... S.M.W. Nativity ..... Height..... Weight.....

Temperature ..... o'clock P. A..... Respiration ..... Hemoglobin.....

Puls E. or W..... N. or S..... Screen ..... MM VR

B.P. E. or W..... B.P. N. or S..... Screen .....

Puls Caracter of Right..... Left .....

Fingers ..... Nails ..... Teeth.....

Appearance ..... Color of Eyes..... Color of Hair.....

Eye Brows..... Face .....

Pupils Dilated Contracted..... Reflex of Pupils.....

Condition of Viscera by Air-Colum Percussion.....

Respiratory System.....

Hart ..... Arteries..... Digestiv System .....

Nervous System..... Urinary System.....

Urin..... Albumin..... Sugar..... Reaction ..... N/10 Na OH.....

S. G..... x 2.33 x quantity..... c. c in 24 hrs..... gms solids

Microscope ..... (Over)

Nose, Throat, Ear, Eye

Generativ Organs

Personal History

Family History

Remarks

Diagnosis

Charge

Advice to the Students of Bio-Dynamo-Chromatics

After you have carefully perused the foregoing, Part One, on Bio-Dynamo-Chromatics, it might be interesting to turn to the lecture on the Human Aura and read that thru carefully.

The reason I giv this advice is that the fysics of Bio-Dynamo-Chromatics and Aura, or, as it might be termd, "Magnetic Atmosfere," ar very similar and in many instances identical.

You do not hav to be able to observ or read aura to do Bio-Dynamo-Chromatic work, but it is very interesting to see how the fysical and the so-cald metafysical go hand in hand in this work. It proves better than anything else that the laws governing "vital force" and its manifestations, "magnetic atmosfere," ar fundamental.

You might ask why I do not hav the chapter on human aura or the "magnetic atmosfere" follow after this chapter. My reason is that the study of the aura is entirely supplementary to the necessary knowledge required for doing Bio-Dynamo-Chromatic work as wel as other fysical work in diagnosis and fysical therapeutics. Therefore it is put at the end. It is what some of my pupils hav cald the "dessert of a rare dinner."

Do not at once try to make a diagnosis by means of Bio-Dynamo-Chromatics but use the B-D-C work in conjunction with any other method of diagnosis that you may wish. Let the B-D-C work be an *aid* to you in your diagnosis and therapeutics until you hav thoroly masterd it, and then you wil find that you can depend upon it, no matter what any other system of diagnosis may pretend to enunciate.

If any errors ar made by any of my pupils in the B-D-C diagnosis, it is not the fault of the *system* but of the *tecnic*. I say this after years of study and observation and after having diagnosed over ten thousand cases by this method without any supplementary aids in making the diagnosis. So far I cannot lern of a single diagnosis made by me with this method that has *proved to be wrong*. In many instances years hav had to pass before it was "self-evident" that the diagnosis was correct. Some hav had to go on the autopsy table to prove the diagnosis was correct and others hav been sacrificed to the surgeon so that by means of the nife he could satisfy himself that my diagnosis was correct.

This cutting a person to pieces to prove a diagnosis, is a Prussian method of "proving the diagnosis at the autopsy." When the necessity of an operation is evident, as it often is, I am certainly in accord with having the operation done, but to open a body out of pure curiosity to see whether the diagnosis is true or not, is like breaking an eg open to see if it is fertil. Besides, it is criminal practis.

Years of observation and practis work in laboratories hav proved to me that many of the laboratory findings ar made to *concur* rather than to be scientifically correct. I wil never forget what a wel known laboratory man told me once—that no laboratory could succede and be popular if it wer antagonistic to the surgeon. Therefore he privately advized me to find out what the surgeon's diagnosis was and then, as far as possible, concur with him. He said by so doing I would be popular with the surgeons and my income would be vastly increast.

This may sound like an "exceptional case" to one not initiated, but it is not. Of course the laboratory man wil deny it if he is accused. A war spy must always deny that he is working for the enemy. That is part of his training and part of his business.

Anyone doing diagnosis along unbeaten paths and contrary to the so-cald "orthodox" methods (or we might say methods tabood by the medical oligarchy) must expect to be criticized and if possible his findings disputed; but *it is better to be honest with yourself than to be a "jolly good fellow" with your confrères.* It is only a question of time when the public wil know that you ar honest and they wil seek you rather than the one who criticizes you.

To succede, a profession as wel as a business must ern profits; and to ern profits it must benefit those who support it. If you master this work, it wil be profitable to you as wel as to your patients, and best of all, you wil feel that you ar doing more for humanity than scores of laboratories who ar using a *ded method* to diagnose rather than a *living method.*

Do not try to reason out this part or that part of the work, that may be new to you, is wrong. Try it out, work it out, study it out, along the lines set forth; and after you hav become proficient in the work and hav thoroly masterd the tecnic and thoroly understand the underlying principles of the work, then and not until then may you deviate from it.

If, after you hav become proficient in the work, you can find improvements in the tecnic, I shal be glad to be

informd, as it is only by co-operation that a work as great as this can be successfully carried on. Life is too short for any one man to develop to a finish any work founded upon natural laws. Natural laws ar immutable laws and ar foundations of ever developing knowledge.

No child of nature can reach perfection because when he has reacht what he at first thot was perfection, he is looking ahed to other fields for exploration; so *to reach perfection for a human being is as impossible as it is to reach the end of a circle or to grasp a rainbow.*

Study wel the Review Questions and Ansers.

TUBERCULOSIS
A-MM VR

Altho this subject is worthy of a large volume by itself, I am going to devote only a few pages to it, but in these few pages I hope to giv something worth while. In my library I hav some large volumes dealing solely with tuberculosis, but between the covers there is nothing new at all regarding the etiology, diagnosis or treatment of this great malady.

Because of the prevalence of tuberculosis, everyone seems to hav a different theory regarding it. I believe that Neageli is not far wrong when he says that 97% of the people hav or hav had tuberculous infection. Nearly every autopsy shows either activ or wald off tubercle lesions in some part of the body.

It seems to me that one of the most ridiculous recent theories has just been publisht and re-publisht in not only the medical journals but in the public press. It is that our resistance to tuberculous infection during adult life is due to a more or less complete immunization thru infections receivd and overcome in youth. One writer, commenting on this, makes the following remark: "According to this, the more diseases one has in childhood, the helthier he should be in adult years. With all regard due to the 'eminent medical scientists' who hatch theories as a hen does egs, we for one do not believe this theory nor its tender immunization—alias making people sick to keep them from being sick."

Another "thing" just going the rounds of the public press, is that the drinking of milk from a tuberculous cow offers immunity to the drinker. This sounds too absurd to be quoted, but it is no more absurd than the theory of vaccination. Think it over and see how absurd this "theory" seems and then compare it with what is usually being practist at the present time.

ETIOLOGY

Any condition that lowers the resistance of the individual can be clast as an etiological factor of this dreded malady.

The specific cause is said to be the tubercle bacilli. However, some investigators, notably Johnathan B. Fraser, M.D., C.M., of Toronto, Ontario, ar of the opinion that the generally recognized "German theory" is not so sound as some of our foren investigators would hav us believe. Dr. Fraser has found that all kinds of germs ar in the air and that we all hav nearly all varieties of germs in us. It is not the germ that causes the condition but the *condition* that makes the nidus for the germs. More is said about this under the hed of The Germ Theory.

I do not know as it makes very much difference just which theory is correct. We know that a person that is apparently wel today may hav something happen to lower his resistance, that is, his opsonic index, and he may hav tuberculosis tomorrow.

That heredity plays a very important rôle in the etiology of tuberculosis, there is no doubt, but is not being "poorly born" that is, *born with impaird resistance,* the real hereditary factor?

Again, if the parents hav tuberculosis one child may hav it while several other children in the same family wil not hav it. This evidently proves that the disease is not as contagious as we ar sometimes inclined to think; but it makes us look up carefully the history of the one child in this family that may hav tuberculosis. Invariably we find the child was "poorly born."

This etiology of tuberculosis can be carried on thru hundreds of pages without, perhaps any real benefit to the reader. One point, however, I want to emphasize, and that is that *vaccination,* inasmuch as it lowers resistance, is doubtless one of our great etiological factors. Vaccination, when it *takes,* produces a febril condition—so much so that some scientists refer to vaccine therapy as *"febril therapy"* because they think that any agency that wil cause a rise in temperature wil act as a vaccine.

A vaccine to do its work must necessarily bild up its own antitoxic elements at the expense of the organism as a whole. This is the lurking enemy that stands redy to pounce upon the victim—the general resistance is lowerd, the nat-

ural immunity entanglements ar broken thru, and the enemy strikes at the weakest point.

I know that I am not in accord with the majority on this mooted question today, but *what is today cald radical or wrong, tomorrow may be cald sound and right.* I could fil hundreds of pages with statistics that would seem to prove that the prevalence of vaccination of any kind tends toward the prevalence of tuberculosis, and I believe that these facts wil little by little come to the surface so that they wil be recognized by the rank and file of liberal thinking physicians, and they in turn wil compel the others to be honest, regardless of those who, from mercenary reasons, endevor to keep the real facts hidden.

Cigaret smoking, which some ar now trying to popularize, either thru mercenary reasons or thru a misconception of the idea of patriotism, is no doubt one of the greatest etiological factors in tuberculosis. I could cite scores of cases where I hav every reason to believe that cigarets wer the cause of tuberculosis. I receive similar reports from others, and these reports ar becoming more voluminous every day.

Cigaret smoking, as wel as other dope, lowers resistance and the commander of the Great White Plague marches in!

Nicotin Poisoning is an etiological factor. Of all forms of nicotin or mixt nicotin poisoning, cigarets ar the vilest. Many young ladies whom I hav diagnosed as having tuberculosis I hav found to be victims of this terrible plague—the cigaret habit. I believe the time wil come when the cigaret habit wil be lookt upon with as great disgust as the taking of morfin or other dedly, habit-forming drugs.

It is generally conceded that one of the great etiological factors of tuberculosis is dope-taking. The reason that cigarets hav not been specifically mentiond as one of the dope factors is no doubt because the habit is so universal. Even a great number of our medical writers and teachers ar addicted to the cigaret habit.

Diagnosis

Altho I hav investigated every known method for diagnosing tuberculosis, I know of none except the Bio-Dynamo-Chromatic method that wil diagnose it *at the very inception.* To wait until the tubercle bacilli can be found is like waiting to see what the autopsy wil reveal.

To say that everyone with tubercle bacilli in the sputum has tuberculosis is as much a fallacy as to say that every one who has sugar in the urin has diabetes mellitus. On a windy day, when walking thru densely populated streets, all of us inhale more or less tubercle bacilli as wel as many other micro-organisms which ar found present in pathological conditions.

The tubercle bacilli wil not show activity in the individual unless his fysical condition is such that they can multiply.

The vaccine method (under whatever name or form it may be used) for diagnosing tuberculosis is doubtless often the *cause* of tuberculosis. I believe the foundation for the vaccine method of diagnosing tuberculosis lies in the fact that the resistance is lowerd by the diagnostic process and, all other conditions being right, the omnipresent tubercle bacilli finds an opportnuity to multiply.

"Self preservation is the first law of Nature" and each cel fights for its existence just as much as the whole cel community known as the individual, does. Consequently when the diagnostic vaccine is used and the alert tubercle bacilli begin their work, the cels put forth antitoxins (no matter under what name they go) to combat the invading army. It is at this stage that the symptoms of tuberculosis can be determind if one has a method of detecting this antitoxic movemen on the part of the cels.

The Bio-Dynamo-Chromatic method of diagnosis wil detect the reaction of the organism to tuberculous vaccine twenty-four hours after inoculation. It wil detect any tubercle bacilli invasion, which really means multiplication, as soon as the defensiv forces of the body ar set in motion.

A person with tuberculosis, twenty-four hours after infection or fifty years after, wil not giv a normal MM VR but wil giv non-actinic ruby or an *A*-MM VR. This has been discust in the chapter dealing with Bio-Dynamo-Chromatics. So far as I hav been able to watch the outcome of several thousand diagnoses, this test is as near infallible as anything can be. In fact I believe the *system* is as infallible as gravitation. *If any error should occur, it is an error in the tecnic and not in the system.*

The X-Ray by some is considerd a very efficient agent in diagnosing tuberculosis. Those who hav depended upon the x-ray for the diagnosing of this malady hav been greatly disappointed. When tuberculosis is far enuf advanst for its ravages to be shown by means of the Roentgen ray, it

is quite far advanst. A wald off, calcified lesion is very redily discoverd with an x-ray plate or by means of the fluoroscope, but the destruction of soft tissue must be quite severe before it can be discoverd by this means.

On the other hand, the tuberculous lesion may hav for its site many locations other than the chest. Time and time again I hav patients whom I can unreservedly diagnose as having tuberculosis, and yet not a sign of the lesion can be found in the chest by the x-ray. The fact that the patients redily improve and recover under proper intensified treatment, seems to prove without any question that the diagnosis of tuberculosis was correct.

SYMPTOMS

The *"classical symptoms"* of tuberculosis ar too wel known to mention here. What I wish to call your attention to is the fact that nearly every symptom known for every other ailment is sometimes the symptom of tuberculosis. It is for that reason that we must be always on the alert and use a method for diagnosing tuberculosis that *diagnoses* it without waiting until the "classical symptoms" appear. *The "classical symptoms" ar often the last symptoms.*

Because of the many and insidious ways in which tuberculosis presents itself, patients ar often treated for years for tuberculosis when in reality the underlying toxemia is syfilis or gonorrhea. It is better, however, to er by treating a case as tuberculosis than to let a tuberculous patient go on until the "classical symptoms" appear.

Waiting to find the tubercle bacilli is like waiting to see what the autopsy wil reveal.

Often a person wil hav tuberculosis and die with it without any tubercle bacilli showing in the sputum or in any of the excreta.

Loss of appetite is one of the so-cald symptoms of tuberculosis but I hav often seen persons with a ravenous appetite who hav been suffering from tuberculosis for years.

One of the most prominent symptoms of tuberculosis is what some call *dyspepsia.* The stomac refuses to digest the food that is given it. Waiting for this symptom, however, is hazardous as many patients wil hav tuberculosis for years and never hav a symptom of indigestion.

"Grip symptoms," which ar causd by a real attack of the grip, at times do not clear up, but linger a long time. When this is the case, suspect tuberculosis.

Cigaret smokers or those poisond with "strait nicotin" ar, by actual statistics, twice as susceptible to tuberculosis as one without nicotin in the system. Therefore, *when any prolongd deviation from helth occurs in a cigaret or tobacco user, suspect tuberculosis and begin vigorous treatment therefor.*

The Bio-Dynamo-Chromatic method of diagnosis clears up all uncertainties regarding the symptoms of tuberculosis. It matters not what the symptoms ar, the Bio-Dynamo-Chromatic test wil surely tel whether the case is tuberculosis or not.

Treatment

The secret of treating tuberculosis to *cure* it is to diagnose it at its very inception.

Ascertain whether the patient has any habits which tend to lower vitality and if so they must be rectified before any systematic treatment can be successfully carried out. If the patient is a cigaret or tobacco user, your first duty is to prohibit their use and also to prohibit the use of other dope, as morfin, etc.

Hygienic mesures perhaps ar more important toward the treating and curing of tuberculosis than any other condition. With this end in view, see that the patient livs properly, thinks properly, is given fresh air, sunlight, and has as plesant surroundings as circumstances wil permit.

I believe that the system of *stuffing* a patient with food, whether they hav tuberculosis or any other disease, belongs to the "dark ages." The system wil take up only just so much food, and the rest of it wil act as an irritant or an intoxicant, or if there ar no other bad effects there wil be fatigue.

I hav found that soluble iodin on the surface of the body or iodin used internally, following out the method outlined under Iodin Therapy, is a great adjunct in the treatment of tuberculosis.

Heliotherapy is probably nature's best restorativ, but all ar not so situated that they can avail themselves of this most potent remedy.

However, we hav in the powerful incandescent lamp and in the quartz, mercury-vapor lamp a method of giving the body condenst sunlight without compelling the patient to go to distant lands or among strangers to receive it.

I hav also found that *oxygen vapor,* which is a terpene peroxid vapor carrying available oxygen, is a great adjunct in the treatment of tuberculosis. This along with powerful light is what some call "condenst out-of-doors," and so successful hav I found these methods of treatment that I cannot help but think they ar among the best, if not the very best methods for combating this great scourge.

Deep thoracic and abdominal breathing ar probably the most efficient wepons in combating this disease, except perhaps, sunlight.

Living in the open and doing deep breathing has probably cured more tuberculous patients than all other agencies.

Change of climate, as far as I can find, has not very much to do with the curing of this disease. I do know that sending a sick person into a new country among strangers is one of the worst practises that has been imposed upon these unfortunate patients. A person with tuberculosis, or any other constitutional disease, should be among people they know and where they can hav good, common-sense, strengthening food.

Our sole aim in treating tuberculosis as wel as other profound toxemias should be to *aid nature* in her work, and unless the patient wil abstain from drugs, such as nicotin, alcohol, and other narcotics and excitants, we should not undertake to treat them. The baneful effect of nicotin or cigarets upon the fysical economy is more fully set forth in the lecture entitld "The Soldiers' Most Dedly Foe."

Bio-Dynamo-Chromatic Treatment

After using the powerful incandescent lamp, and if possible the actinic, or mercury-vapor rays (Quartz Light) for treating the patient, carrying out the tecnic as given, I follow this treatment with oxygen-vapor inhalations. Along with the oxygen vapor I invariably use the intermittent dark-room-ruby light, that is, light radiated thru a dark-room-ruby lamp or thru my A^4-Chromatic screen—B-D-C therapy.

The Inhaling Tube

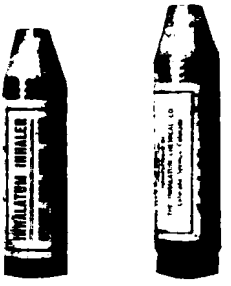
Inasmuch as it is not practical for the average patient to hav more than one treatment daily, in order to keep them exercizing their lungs *rythmically* and to hav them diligently apply their *mental forces* toward recovery, I use an

inhaling tube. The inhaling tube that I furnish my patients is shown in Fig. 142. One of these Figs. shows the cork out of the glass tube and the other shows it in the tube. This is a simple taperd glass tube. Within it is some perforated, non-corrosiv metal and within that is a small piece of comprest cotton or gauze for absorbing the medicament to be used.

Another style of tube, which is much more expensiv, is the hard rubber inhaling tube shown in Fig. 143. This tube also contains some absorbent material within perforated, non-corrosiv metal.

The medicament I use principally is the "Best Ever Nebulizing Oil," the formula for which is given under Nose and Throat diseases.

The tecnic for using these breathing tubes is to first saturate the comprest cotton with the nebulizing oil and then



A B

Fig. 142. Showing the style of glass inhaling tube that I giv patients for treatment to be used in conjunction with offis treatment. *A* shows the tube with the cork out redy for use. *B* shows the tube with the cork in it. M'fd. by Inhalatum Chemical Co., Colorado Springs, Colo.

put the cork in. Leave the cork in only when the tube is not in use. When the tube is in use, remove the cork. That allows the air to flow thru the medicated filler.

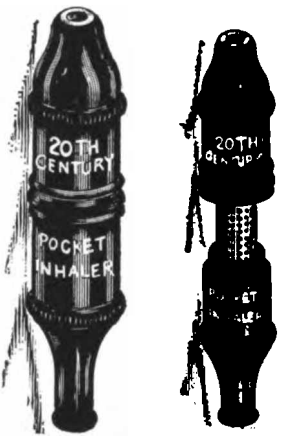
I instruct the patient to spend 15 minutes every two hours in *relaxing* and *breathing rythmically*, following out deep breathing exercizes. Breathe first thru one nostril while closing the other, and then thru the other nostril in the same manner. In this way both nostrils ar put into activ use, the patient cultivates rythmic breathing, the lungs ar expanded, the closed alveoli ar opend, the patient's mind is put intelligently upon the ultimate relief, and he is greatly benefited by this simple, routine mesure.

Inhalatum is another medicament that can be used in these tubes in place of the nebulizing oil referd to. This product is manufactured by the Inhalatum Chemical Co. of Colorado Springs, Colo., and is very beneficial in conditions causing cof or irritation of the respiratory tract.

Chromo-Therapy in Tuberculosis

Under the hed of Chromo-Therapy, the tecnic of Chromo-Therapeutic procedures ar given.

Years ago Dr. Edwin D. Babbitt in his great work entitled, "The Principles of Light and Color, mentiond a woman thirty-five years of age suffering from tuberculosis



A B

Fig. 143. Hard rubber Pocket Inhaling Tube, manufactured by Stevens Health Inventions Co, San Francisco, Calif. *A* shows it closed. *B* shows the same tube opend up to show its construction.

in an advanst stage. Both lungs wer seriously involvd and she had night swets and periodical chils about 11 a.m. followd by fever and flushing in the afternoon.

This woman's history was tuberculous from the beginning, and many of her immediate family had succumd to the disease.

This lady was cured by chromatic baths. This was at a time when very little was known about the special hygienic mesures now so popularly known for treating this malady.

Dr. Babbitt's method was to treat the hed with a blue color, the trunk with red and yellow, and the legs with red. Altho this scheme of Chromo-Therapy is not at all modern, yet from our present knowledge of color vibrations, it is quite remarkable. Probably light radiated thru red or red-orange colord silks ar the colors most potent for treating this disease by modern Chromo-Therapy.

We know that the non-actinic rays wil temporarily neutralize the abnormal energy coming from a tuberculous lesion. Therefore non-actinic colors ar the colors most suited for neutralizing this pathological condition. Under the hed of "The Polarity of Colors" other data regarding the selection of colors has been given.

The "Rest Cure"

I hav not mentiond "the rest cure" for tuberculosis as I am not yet convinst that it is a potent agency in treating this disease. I know of one institution in particular that is very careful to take only incipient cases of tuberculosis. They insist upon putting every patient to bed and keeping them there for several weeks, and giving them all the food they can eat. I hav reliable information that more deths occur in that institution than in any other similar institution for the number of cases treated.

From my standpoint, the method is unscientific and unnatural. To keep a person lying quietly in bed and stuf them with food seems to be the most antagonistic treatment for any condition. We would not think of doing this with any animal unless to fatten it for killing, but in such fattening the animal becomes diseasd and is abnormal. There ar circumstances, especially where there is a high running fever, where rest in bed is cald for, but the "rest cure" and the "stuffing cure" combind wil prepare the patient for the undertaker about as quickly as any other method I know of.

Common sense should be used in treating tuberculosis as much as any other condition, but it is the one essential that seems to be most neglected.

CLINICAL CASES: TUBERCULOSIS

Case 1

January 27, 1915, Mrs. B., aged 50, was sent to me for examination. Family history: Father died at the age of 48 from cronic diarrhea, which lasted for a year. Mother is past 80 and in fine helth.

Personal history: Always practist gvmnastics and athletics, and was accustomd to long horse-back rides on the plains. Workt at teaching and stenografy since she was 18. Constipated since she was 30. Never pregnant. Menstruation ceast when she was 40. Was conscious of a sensitiv area on the right side just below the diafram and on a line with the gall bladder about two years before I saw her. She put on hot cloths and the next day notist a slight swelling. For three months this swelling continued to grow until it was "as large as a base ball." When the swelling was at its height, her voice nearly faild, her jaws apparently set, and she said she thot she was going to hav lockjaw. She cald on a surgeon who cald in several other physicians. The swelling was lanst and about a pint of yellow pus, followd by a little green pus, came out. The surgeon gave no hopes, as he said the pus had gotten into the tissues and gangrene had set in. At this time she began to hav a "reflex cof" night and day.

As this woman has a crippled husband to support, she went to her work in a real estate offis the next day. The opening continued to emit pus for about six months, when it heald over. Three months previous to the healing, a swelling appeard in the left sacral region, then down the right gluteal region, and opend in the right gluteal fold about six months before I saw her. (Fig. 144.)

About January 15, 1915, pus began to collect and come out of the original opening. When I first saw the patient on the evening of January 27, her temperature was 99. Her skin was coverd with "silver lines" and had fine, silver

scales. She said she never had dropsy or any swelling of the skin to cause these lines. The skin was soft, notwithstanding its scaly appearance. The peculiar appearance of the skin was causd by emaciation, as she had been quite fleshy. She was very weak and it was apparent that she was suffering from some profound toxemia.

Her examination in the magnetic meridian showd a sympathetic-vagal reflex only with the ruby light (*A*-MM VR), and by the energy conductors the typical reaction for tuberculosis could be taken from all the area that showd any swelling. This was a circle around the body about 4 inches wide which stood out something like a small life preserver. The energy over the openings was sufficient to elicit the VR

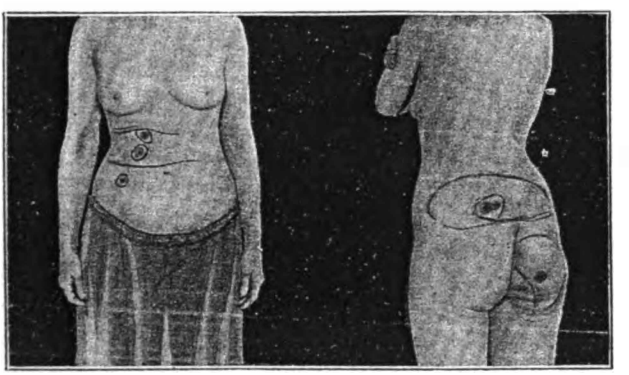


Fig 144. Showing a patient cured of a great tuberculosis abdominal abscess. The "pitted" places ar scars of openings, from which pus flowd for months. One such scar on inside of right thigh does not show. The markt areas, front and back, show where the great swellings wer located.

in a subject when the patient-terminal of the conductor was several inches distant from the lesion.

With this patient, percussion of any kind was impractical, and I obtaind the findings entirely by means of the organotonometer over the chest and scapular region. (Fig. 47.)

That evening I gave her light from a 2,000-candle-power incandescent lamp for about one and one-half hours over the abdomen and back. Before she left the pus began to come out in large quantities from the anterior and posterior openings. Realizing the danger of manipulation, I

took every precaution to not make any pressure on the skin, and cautiond her about it. This light I kept about twenty-four inches from the body, and it produced a cherry-red erythema.

I feard to giv x-ray treatment, thinking it might set up disastrous reactions, so resorted to the powerful light for a long period.

I askt the patient to report the second night after, and I arranged to hav several physicians present to see her. When she came, she reported that she had been a great deal worse the day after the treatment and was afraid to hav the light used again as she could not be away from her work. I demonstrated to the doctors my method of diagnosis. One of them, a professional pathologist, made smears and we examind them under the microscope. No micro-organisms could be found. He made more slides and took them to his laboratory, but reported the same result.

Three nights after I arranged to hav the lady come again, and had several other doctors present, among whom wer a laboratory specialist and an x-ray specialist. They all said they had never seen a case like this and wer at a loss as to what the condition could be. They all agreed that there wer no signs of tuberculosis and they would not think of that condition except for my findings.

The first night of the examination, I wrote on my diagnostic card that the patient had a sub-diafragmatic, tuberculous abscess of the bovin type, situated posterior to the gall bladder.

The laboratory man took a quantity of the pus, which was pouring from the anterior opening, and made slides as wel as plantings on hydrocele agar and testicular agar. He also injected 2 c.c. into a guinea pig.

I persuaded the patient to let me giv her another treatment with the light, and she was under it from one and one-half to two hours. I advized her to begin sleeping parallel to the magnetic meridian, hav as much fresh air in her room as possible, and eat all the nourishing food she could.

The following day she reported she had slept better that night than she had in a long time, altho the pus was flowing from the openings in great quantities. I cautiond her about being careful with this pus.

Within a few days the radiograf specialist took some skiagrafs and the plates showd nothing pathological. Later he took some more in a different position to see if there wer

a diseasd rib or other caries, but the skiagrafs showd nothing abnormal.

I wanted to inject bismuth into the openings, but the patient would not consent, for fear it would keep her from her work, and besides she could hardly move about at her best.

The laboratory man reported that the pus was steril and the guinea pig was growing fat. He considerd the diagnosis of tuberculosis must be wrong.

None of the fifteen doctors who saw this patient would venture a diagnosis, as the tissues seemd to be impregnated with pus from an unknown source. This abscess is what used to be known as a "cold abscess "as there was no special fever, and the pus was steril. (The bovin type of tuberculous abscess generally possesses these caracteristics.)

Under two or three weeks' treatment with a 2,000-candle-power lamp, each treatment lasting from one to two hours, and other methods mentiond, the patient began to improve in every way. For the first month of her treatment her temperature was subnormal in the morning and practically normal every evening. Then it went up to about 92.8 in the morning and 98.5 in the evening. The following October it was about normal both morning and evening, altho some days it showd .2 or .3 rise in the afternoon after a hard day's work.

Five weeks after the guinea pig was inoculated the laboratory man reported its deth. The pathologist, in the presence of the laboratory man, opend the pig, and they found the peritoneum, hart, lungs, liver, spleen and kidneys macroscopically normal with no enlarged glands. The site of the inoculation was surrounded by a yellowish mass. The entire colon appeard to be black. The yellowish mass in the center of the abdominal wall proved to be teeming with tubercle bacilli of a short, stubby variety—the bovin type. This finding clincht my diagnosis and shows the importance of this method in diagnosing tuberculosis.

As for the treatment, it has spoken for itself. The first of April, 1915, the patient told me I could never know how much better she was feeling, the swelling had gone down and not more than enuf pus to soil a cloth came from the openings in twenty-four hours.

For about four and one-half months this patient receivd radiations from a 2,000-candle-power lamp for an hour every other night. Then I began oxygen-vapor inhalation

without the treatments from the big light. This was given for over half an hour each night for about six weeks. During all this time, progress was slow but sure. I then adopted the intermittent ruby-light treatment along with the oxygen-vapor inhalation.

With this last form of treatment the patient improved far more rapidly than she had with any other. She now has no cof, her bowels work perfectly, her appetite is good, she is strong enuf to go from the trolly and upstairs without stopping to rest, can get in and out of bath tub and take baths without any il effects, is hardly ever conscious of any pain or soreness, and has gaind about twenty pounds. All this improvement took place while this woman workt in an offis from eight in the morning until five at night, kept house, and did her own dressmaking, while coming for treatments nearly every evening. She has to go up and down stairs about two hundred times a day in the place where she works. She says she cannot average over six hours a night in bed.

As she considerd herself a "wel woman," she stopt taking regular treatments after having them for about one year.

The fact that no one had been able to diagnose the cause of this terrible abscess makes the case of peculiar interest because my Bio-Dynamo-Chromatic findings wer those of tuberculosis (*A*-MM VR). This diagnosis was verified by animal inoculation in a public laboratory.

The indentures in the flesh, front and back (Fig. 144), show the openings from which pus flowd in great quantities. The outline on front and back show the areas that wer engorged with pus. This abscess was so large that the bust line and waist line wer nearly obliterated.

Ten months of daily treatments with Radiant Light, Oxygen Vapor, and Intermittent Ruby. A⁴-Chromatic Screen) *cured this lady.* Within a year from the day she was brot to me in what seemd a hopeless condition, she was examind for an insurance policy and past as *wel.* Time has proved that she *is wel.*

This is a typical case as far as the diagnosis goes, and shows not only the exactness of my Bio-Dynamo-Chromatic System of Diagnosis but the great value of Bio-Dynamo-Chromatic Therapy, along with Oxygen-Vapor Therapy and and Radiant-Light Therapy.

Fig. 144 shows this patient one year after the first treatment. I might ad that at this time—March, 1918—this lady is stil wel and managing a large business.

Case 2

Another remarkable case which vividly illustrates the importance of a correct diagnosis.

About April 1, 1915, an oculist brot a lady to me for consultation. He had diagnosed the case as syfilitic iridocyclitis. I found the symptoms of iriditis very pronounst with tenderness in the ciliary region and swelling of the upper lid. The woman was about twenty-five years old and the mother of two helthy children. She had receivd a Wassermann test which was said to be "positiv." I examind her in the magnetic meridian and found that she had no blue MM VR, but that she gave a decided ruby MM VR. Consequently I diagnosd the case as tuberculosis with involvment of the iris, ciliary body and coroid.

The oculist said he did not think this diagnosis was right as the eye did not look like a tuberculous eye.

The energy from the eye, by auto-excitation, was dissipated by a ruby light and I told the oculist that I was *sure* it was tuberculous iridocyclitis, and that the woman was free from syfilis. I told him I had found as many Wassermann tests wrong as right and placed no dependence upon them.

Altho the woman gave no history of syfilis and her husband and children wer helthy, because of the Wassermann test, the oculist decided to treat the patient for syfilis. I told him the longer he did that, the greater the possibility that the woman would lose one or both eyes.

I did not see the oculist again for about three months when he came in and told me that after two months of mercury rubs, he had indisputable evidence of tuberculosis; that the temperature was higher in the afternoon than in the morning, that the patient had night swets, and that tubercle bacilli could be found in the secretion from the eye.

There is no hope of saving the sight of one eye, and perhaps both wil be lost. Had rigid treatment for tuberculosis been instituted at once, no doubt the sight of both eyes could hav been saved.

Case 3

Sometime ago one of my pupils, F. L. Class, M.D., Huron, S. Dakota, reported that he had tested patients who

gave a normal MM VR. He then scarified the arm, rubd on 25% old tuberculin (O.T.) and twenty-four hours after, the same patient gave a ruby MM VR (*A*-MM VR). I hav checkt up this work and found that Dr. Class is correct, and that tuberculin given in this manner can be detected by my Bio-Dynamo-Chromatic method of diagnosis twenty-four hours after the scarification and inoculation.

Case 4

The following case was referd to me for diagnosis. The man was 40 years old. Bv the B-D-C method I diagnosed the case as tuberculosis and located the lesion in the upper lobe of the right lung. The reaction in every way was typical for tuberculosis. After the diagnosis was made, the doctor told me the man had been his patient for four years. He had found tubercle bacilli in the sputum, and the man had been sent to the Pacific Coast from New York state because he had tuberculosis. The doctor brot him to me to see whether this method of diagnosis wer accurate.

Following out the B-D-C therapy, this patient gaind more in a few months than he had before in five years, altho he had been following the open air and good food treatment.

Case 5

Erly in 1915 a robust man, weighing about 225 pounds, was sent to me for diagnosis. He complaind of a slight cof which had been persistent for about eight months. His case had been diagnosed as bronchitis. By the B-D-C method, I found he had tuberculosis. By careful testing I located the site of the lesion in the apex of the right lung. He could not believe he had tuberculosis, and would not begin treatment for it. Within three months his temperature and loss of weight proved beyond all doubt that the diagnosis was correct.

Case 6

Miss B., teacher, 25 years old. Resident of Minnesota. Was sent to me for diagnosis and treatment. Her history showd that up to two months previous to my seeing her, she was in robust condition and had never been sick. She went to some convention about Thanksgiving time and had a chil one evening. The next morning she "felt aky and had pains all over." Within a week or so her scool opend and

she commenst her duties again and kept them up until Christmas vacation when she collapst.

A "change of climate" was advized and she came to me in California.

According to my B-D-C method of diagnosis this lady gave an *A*-MM VR, but would not giv an *A*[4] or any other MM VR. From these findings I diagnosed the case as *rapid* tuberculosis and would giv no hope for recovery, as her resistance was much less than the activity of the energy from the toxemia. In other words she did not hav a "fighting chance" according to the B-D-C findings. From the lower and middle lobes of the right lung I could elicit a VR by auto-excitation, said lesional energy being dissipated by the diagnosing color.

Within a few days I was able to find samples of sputum that would show numerous tubercle bacilli.

Before sending this lady to me, several physicians had examind her and diagnosed her as having "anemia and bronchitis," but no tubercle bacilli wer found in the sputum.

I advized the parents to take this lady back home, as I felt sure that she would soon die. They insisted that I treat her at least a month, which I did. Soon after that they took her home and she died just one year from the time she was taken il for the first time in her life. Her attending physician gave the cause of deth as "rapid tuberculosis."

Case 7

Some months ago a doctor presented himself for examination by the B-D-C method. As his general fysique was so robust and helthy, I could not see why he should want to be examind, unless it wer to study the tecnic.

He did not giv a normal MM VR but gave a pronounst *A*-MM VR, so I diagnosed him as having tuberculosis.

Other doctors who saw the method of diagnosis and herd the report said they could not see how it was possible. I then askt the doctor to giv his history, which I had not askt previous to the examination.

He said that while he was taking a postgraduate course in New Orleans about ten years ago, he discoverd that he had contracted tuberculosis. He then went to what he supposed was a very favorable location in Colorado and "recoverd his helth." At the time of the examination, he weighd 175 pounds; his height is 5 feet 8 inches. Altho he feels wel, he givs a history of being conscious of lack of resistance and

of taking cold very easily. When he does take cold he has a sore place in the affected lung.

After knowing the history, I modified the diagnosis to "*cronic* incipient tuberculosis."

I mention this case in particular to bring out the fact that many persons wil hav tuberculosis in an incipient form and their reactiv energy does not seem to be sufficient to liberate them from the disease. This form of tuberculosis is what used to be termd "dry or sclerotic tuberculosis." Persons can hav this form of tuberculosis for years and attend to their regular work without any special inconvenience, provided they do not overdo. It seems as tho their resistance just about balanst the effects of the toxemia. Such persons can very redily hav a very sudden relaps, which in many instances proves fatal.

I hav known of cases of this type, that did not know they had tuberculosis, but suddenly died from the effects of a pulmonary hemorrhage. I hav seen other cases that gave a history of this same form of infection lasting for over thirty years, tho they had carried on a regular line of easy, fysical work.

In such a type I always advize all the rest the patient can take and caution them against sudden, or extra exertion. Within the past few years I hav been apparently curing such cases by means of radiations from the powerful incandescent lamp, oxygen vapor and B-D-C therapy. As a rule it requires at least a year to cure such cases.

Case 8 *Neurasthenia following Tuberculosis*

In January, 1915, a lady was brot to me for diagnosis, whose only symptoms wer extreme nervousness and insomnia. She gave an *A*-MM VR, and I diagnosed the case as neurasthenia following tuberculosis. I found a history of tuberculosis about ten years ago. The lady had taken a course of treatment in some sanitarium and supposed she had been cured six years before. She had been losing weight on an average of two pounds a year for the past six years. By watching the temperature for a week I found a rise of one to two degrees every afternoon abov what it was in the morning. I immediately began powerful-light therapy, B-D-C and Oxygen-Vapor Therapy.

After the first five treatments the lady was able to sleep wel from erly in the evening until morning. Her nervous condition was greatly improved, and altho she had had

only about thirty daily treatments, her condition was so markedly improved that one would not hav to guess as to whether the treatment wer beneficial or not. This case is very interesting from the fact that neurasthenia is very often concomitant with incipient tuberculosis, as the system seems to hav exhausted itself in combating the disease. This patient has remaind practically wel for the past three years.

Case 9

The following case was reported by one of my pupils: Man about 40 years old. Had caracteristic brassy voice, temperature 2° above normal in the afternoon. Had lost flesh, had night swets, and complaind of prostration, etc.

This patient gave a decided *A*-MM VR, and the localized energy from the larynx was dissipated by the diagnosing colors. He was treated with the 2,000-candle-power lamp over the throat and chest, followd by oxygen-vapor inhalation and B-D-C treatments daily. After two months, the patient had gaind fifteen pounds in weight, the voice had returnd to normal, and he said he felt better than he had for many years. He appears to be wel in every respect.

Case 10

One of my pupils gives the following report:

"By means of your Bio-Dynamo-Chromatic method of diagnosis, I recently diagnosed two patients as having tuberculosis. Several other physicians wer in consultation and my diagnosis was disputed. One of the patients went to a wel-known surgeon while the other one went to a medical specialist at one of our large universities. They both declared that *there wer no symptoms of tuberculosis and my diagnosis must be wrong.* Time has now made it possible for anyone to diagnose these cases as tuberculosis. I report this in appreciation of your method and I believe if anyone is particular in their tecnic they can rely on this method of diagnosis, no matter what any other method of diagnosis may infer."

Case 11

C. N., 18 years old. Athletic. Very strong. Was suddenly taken with a tired-out feeling and sleeplessness. Began to cof and case was diagnosed as bronchitis and nervousness. Was referd to me in August and I diagnosed him as having tuberculosis of right lung, upper lobe, and of right kidney, because he had an *A*-MM VR and energy taken from the

areas named was dissipated by the same color. Careful examination of sputum and urin disclosed numerous tubercle bacilli. He had two attacks of hemoptysis, after which he was taken to a "T. B. specialist" and told that he would not liv two months, as it was "hasty consumption." He was brot back to me and I began with 2,000-candle-power lamp over diseased areas for 20 minutes daily and 40 minutes of oxygen-vapor inhalation along with B-D-C therapy daily. Within one month this young man began to improve in every way. After that he was taken to a ranch to liv out-of-doors til December.

I examind him again in February when he gave a normal MM VR. It is now three years since I pronounst him wel and he is at this time a robust, helthy person.

Case 12

The following is a *very interesting case* and servs to illustrate the importance of making a *personal diagnosis* of every case that comes under a physician's care. It also shows how unreliable ar the patient's own statements regarding their case.

Mrs. S., 47 years old. Mother of two helthy children. Traveld 3,000 miles to hav me treat her for "nervousness" and, as she said, "syfilis." She said she was suffering from extreme nervousness and insomnia "causd by syfilis" and she wanted me to treat her.

I told her I would not treat anyone without making a diagnosis myself, as I did not depend upon anyone else's diagnosis. She replied that she *knew* she had "syfilis" and had had it for seventeen years. She had been treated by very many physicians for "syfilis" and she had left her husband seventeen years ago for giving her "syfilis."

By means of the B-D-C method I found that she did not hav a normal MM VR and neither did she hav a *C*-MM VR, but she had a very decided *A*-MM VR. Consequently I told her most emfatically that she was suffering from *tuberculosis* and not from syfilis. Her surprise can be better imagind than exprest.

I then began to obtain her history. She said, some years after her second child was born, she had a "sore" on the vulva. This "sore" was followd by "enlargement of the glands in the groin" (inguinal glands), and as she supposed, "ovarian trouble" also. She used "some bland ointments for the sore," which entirely heald up, but the aking condition

in the groin worried her so much that she went to a surgeon. He told her that she would need to hav the ovaries removed, "because of this dul ake in the groin." This operation was performd. After that she had all sorts of postoperativ nervous symptoms. She said the surgeon told her all these symptoms came from the "syfilitic infection," which *she* told him she doubtless had.

Her nervous symptoms continued to grow worse until she had "nervous prostration." Ten years after the operation, she "took cold" which did not get wel as rapidly as it should. A cof persisted and some physician told her she had "bronchitis." Soon the glands in her neck began to swel and also the glands in the axillæ. She visited another physician and he told her that the enlarged glands probablv came from her "syfilitic condition," she having told him that she had had "svfilis." He told her that a "curettage" of these glands would be necessarv. She was taken to a hospital and the glands "curetted." When I examind her there was not a sign of a scar in the axillæ, showing that it must hav been a very "superficial curettage." She reported that these glands discharged some "pus."

Owing to the location of the glands in the neck they wer not "curetted." Within a few months all signs of enlarged glands in the neck had disappeard, *without any treatment*.

One physician whom she had consulted several years ago gave her large doses of potassium iodid, *because she told him she had "syfilis."* This disagreed with her and she had "an eruption from hed to foot" from using it. After discontinuing the drug, her skin became normal.

She gave a history of her mother dying of tuberculosis, and several near relativs having died from it. She also gave a history that every time she "took cold," it persisted and "it seemd as tho she could never get over it."

Her *neurotic condition* is a condition that I often find in incipient tuberculosis. The *glandular history* she gave is what I often find in *tuberculosis*. The "sore" she referd to on the labia majora was no doubt a soft chancre. The "pain in the groin" was probably causd by the enlargement of the inguinal, lymfatic glands. The *nervous symptoms* after the operation ar what I often find following a complete ovariectomy, especially as it was commonly done several years ago.

Altho this woman's history did not show one symptom caracteristic of syfilis, yet she had been treated for syfilis by

several doctors *because she told them she had syfilis.* Her history is typical of *tuberculosis;* and this shows what a valuable adjunct B-D-C diagnosis is, and how convenient it is to be able to make the examination yourself *at once* and not wait for some laboratory to giv, what may be, an unreliable diagnosis.

Observ that I made the B-D-C diagnosis *before obtaining her history,* so the diagnosis was not made to fit the history, but the history corroborated the diagnosis.

P. C. Jensen, M.D., Manistee, Mich., reports Case 13.

Case 13

Girl 15 yrs. old had been treated by many doctors for various troubles. They had repeatedly sent specimens of sputum to the Lansing, Michigan, Board of Helth Department with negativ results. Patient was anemic with bronchial cof and some consolidation of left lung, indicating a cronic bronchial neumonic condition. She had a sub-normal temperature in the morning and a temperature of 101° F. in the afternoon.

According to your B-D-C method I diagnosed her as having tuberculosis. Later tubercle bacilli wer found in the sputum. This patient has now gaind thirty pounds in eight months' treatment. She is free from cof, and has a good appetite and ruddy complexion. The treatment consisted of oxygen-vapor inhalation along with your B-D-C method of therapy. Treatments wer given every day. Internally I gave her codliver oil colord with carminic acid. At the present time there is not a sign of tubercle bacilli in the sputum. She is to all appearances a wel girl and is one of the happiest girls in town.

Case 14

A lady 23 years old had been treated for "malaria" for two years. She did not improve and was referd to me for diagnosis. By my B-D-C method I diagnosed her as having tuberculosis, incipient type. She was treated according to my methods for tuberculosis and was made wel, and has remaind wel for years.

(Note—As in "cancer" cases, so in "tuberculosis" cases, I could go on indefinitly to prove that the "old style" methods of diagnosis ar not 40 per cent. correct. Why? Because the methods ar not natural. There is no natural law governing their methods. They ar misled by "serums"

and "vaccines" and by "animal tests" or "test-tube tests," all of which fall way short of hitting the mark. "Nature can't be fooled."

The following five cases wer reported by T. Howard Plank, M.D., Chicago, Ill.:

Case 15

W. K. Female aged 25. Had been sick for over a year. In August, 1916, she began running a temperature which at one time went as high as 105°. She coft a great deal and was tired all the time. She went to Denver in September and from there to Wyoming. While west, which was for one year, she coft up blood at two different times. She came to me on the 13th of July, 1917. By means of the Bio-Dynamo-Chromatic system I diagnosed her as having *tuberculosis,* but with a good resistance. Fysical examination showd a decided affection of the upper lobe of the right lung.

She began treatment with the 3,000-candle-power lamp 30 minutes, followd by about an eight-minute treatment with the Quartz Light. This treatment was given daily. Within two weeks her cof was gone and within three weeks she was doing a normal amount of work. She has continued to improve and is today (Feb. 1918) to all appearances a wel woman.

Case 16

R. A., aged 15. Female. Came to me Oct. 17, 1916. Had been running a temperature for two weeks and for six weeks her appetite had been poor and she had become extremely irritable. By means of the Bio-Dynamo-Chromatic method, I diagnosed her as having *tuberculosis.* I located the trouble in the middle and lower lobes of the right lung. I began giving her daily treatments with the 3,000-candle-power lamp, followd by the Quartz Light as abov cited. Improvement began at once and within thirty days she was running a normal temperature. In August, 1917, I examind this girl again by means of the Bio-Dynamo-Chromatic system and found her normal and clinically wel.

Case 17

M. W. Male, aged 24. Came to me July 27, 1916, with a history of pulmonary tuberculosis of a year's standing. His temperature ran as high as 104, puls 120, respiration 38. I at once began treatments with the 3,000-candle-power in-

candescent lamp followd by the Quartz Light, carrying out the tecnic as abov mentiond.

This case began to improve at once and has continued to improve, and for the past six months as far as clinical symptoms go, he is wel. He has now been accepted in the army.

Case 18

Male, aged 27. Began coffing one year ago. Was at Naperville Sanitarium in Nov. 1916, and at Windfield Sanitarium from Jan. to July, 1917 inclusiv. When he came to me Aug. 27, 1917, he was coffing and was unable to work.

By means of the Bio-Dynamo-Chromatic system I diagnosed him as having tuberculosis and involvment of the upper lobe of the right lung, but reaction good. I began treating him at once by the 3,000-candle-power incandescent lamp followd by the Quartz Light. After the fifth treatment the "tired feeling" had left him. Within a few days the coffing ceast. At the present time he is so much improved that no one can doubt but that this method of treatment wil cure him.

Case 19

R. W. Female, aged 15. Came to me March 17, 1917. She had been il for about six weeks and had been running a temperature for over two weeks. By means of the Bio-Dynamo-Chromatic system I diagnosed her as having tuberculosis. I immediately began treatment with the 3,000-candle-power lamp and the Quartz Light following out the tecnic as abov given. She began to improve within a week and has continued to do so. After three months of treatment she was clinically wel, but occasionally takes a treatment altho to all intents and purposes she is a wel girl.

Dr. Plank teaches his patients how to do deep breathing and instructs them in common sense dieting without stuffing. He gave several reports of bone tuberculosis which had been given all sorts of other diagnoses, but by the B-D-C method he was sure the cause was tuberculosis. By means of the 3,000-candle-power incandescent lamp followd by the Quartz Light they wer cured.

Recently Dr. Plank has instald an intermittent light system for B-D-C therapy and also oxygen-vapor generators.

(*For other clinical cases of tuberculosis, see "Diagnosis as a Specialty."*)

CARCINOMA—CANCER

B-MM I'R

DISCUSSION

One authority says: "The term, cancer, includes all those forms that ar causd by the infection of the lymf space of a patient by growing epithelial cels. All forms of cancer ar malignant, that is, they often recur after removal, invade the surrounding tissues, ar reproduced in other parts of the body and tend to destroy life." From this recognized definition of cancer, it can at once be understood why the cutting of a cancerous growth, or otherwise destroying it *does not cure the condition which made the cancerous growth possible.* In other words, to cure a cancer one must cure the patient.

The most recent reserches as to the condition of patients having cancer show that:

1. Cancer must follow a cronic alkalin intoxication which is secondary to cronic constipation.

2. The locus of the tumor is determind by cronic irritation, either direct or reflex.

3. The cancerous condition must be corrected by means of elimination.

4. The oxygen carrying power of the blood must be increast.

6. A cancerous tumor must be destroyd by inflammation.

7. Inflammation is best secured by electrical mesures and by chemical caustics.

By carefully looking over the known facts regarding cancer, it can redily be seen that the *constitutional* treatment for cancer must go hand in hand with the elimination of the growth.

As with tuberculosis, so with cancer. Volumes upon volumes hav been written on this dred disease. Societies hav been formd for seeking its cause and remedy. Some claim it is causd by a parasite and others, equally wel in-

formd, claim it is causd by some bacteria. Others claim it is causd by a "dislocation" of primitiv cels, and others that it is inherited; others that it is causd by errors in diet; and the very latest of them all and perhaps the most authentic is *the cause of cancer is unknown.*

What I hav to say regarding cancer applies equally wel to sarcoma as both ar malignant growths, one having chiefly epithelial cels, while the other is made up mostly of a substance like the embryonic connectiv tissue.

Most of the experiments done in our "foundation institutions" to study this great problem ar done on animals other than man. It would seem as tho, with all the clinical material that we hav about us, *human cancer* could be studied on *humans.* While cancers of mice, chickens, and other animals, as wel as plants, may be and of course ar a "lawless proliferation of cels" that take on the appearance of "human cancer," yet may they not be quite different? The fact that cancer is *apparently* on the increase and the treatment of cancer seems to be as inefficient as it was many years ago, seems to prove that the "foundation institutions" for the study of cancer must be fundamentally wrong.

Recently more than one surgeon of wide reputation has said in public before their confrères that all growths, especially those in the brests of women, should be cald "cancer" because they had now educated the public up to the fact that cancer could be cured by no other means except the nife and therefore it would mean a surgical operation. It is for this reason that I am not fully convist that cancer in reality is increasing, but we must admit that *the diagnosis of cancer* is increasing.

I can recall scores of cases diagnosed by some of our very best surgeons in the U. S. as having cancer and "immediate operation to save life" advized. They hav come to me for diagnosis as wel as treatment. The majority of those cases did not giv the Bio-Dynamo-Chromatic reaction for cancer and therefore I diagnosed the growths as *simple* growths and *not malignant.*

By means of hygienic mesures such as diet, powerful radiant energy, and other methods that wil be mentiond later, these cases wer entirely cured without any operation —not even breaking the skin. I *know* the cases wer *cured* because the growth disappeard and months and years hav elapst since the growths disappeard and there has been no return of them.

There ar so many different varieties of malignant growths that ar clast under the term "cancer" that one of the best known pathologists in this country told me that he was often puzzled to make a diagnosis from "specimens" sent him, but that he made it a rule, when in doubt, to call the specimen *cancerous*.

Some of the "cancer campain" publications seem to be bent on saturating the medical men with the delusion that *cancer* is never really cured, and that if the condition *is* cured it is not cancerous. From a humane standpoint, this is very unfortunate. To say that true cancers ar never cured, or never cured without surgical interference is *absolutely false*. To say that if a neoplasm is cured without surgical interference it is not cancer is untenable. It is either the ignorance of the ones who make these assertions or it is the fact that they want to keep the public in suspense and ignorance on this subject. Often wel-meaning surgeons who hav diagnosed some of the cases that come under my care as cancerous, hav told me that inasmuch as the cases had been diagnosed as cancer I should concur with them and then if the case wer cured without operation, so much greater would be my reputation as a "cancer specialist." Of course these surgeons did not tel me this from malice. They thot it would be a help to me. It shows how some hav their reasoning powers warpt.

A patient would be much more imprest by the work of a physician who eradicated a growth from the brest or elsewhere under the *name* of cancer than they would under some other name. The question is would this form of deception be of lasting good to the physician? *I claim that it would not*, but that to be frank with your patient in the long run is the best policy to pursue, if the frankness would not jeopardize their helth.

The fact that so many drugless physicians of all kinds ar outstripping the other physicians and that the "Christian Scientists" ar making such tremendous strides, *proves* that "all the people cannot be foold all the time." We all hear very often of this person or that person having been cured of cancer by "prayer" or by the "laying on of hands," or by "absent treatment" and divers other means not taut in recognized medical colleges. We immediately say, "It was not cancer or it would not hav been cured." On the other hand if a *surgeon* diagnoses a case as cancerous, operates,

and the patient recovers, the case is said to hav been *cancer* and the *surgeon* gets the credit of having *cured* cancer.

I contend that what is right for one is right for the other. We should certainly be glad if anyone can cure an abnormal growth without mutilation.

Let our aims be to cure by constructiv means rather than by destructiv means.

Recently a very noted surgeon told me that he operated on cancerous cases almost from morning until night nearly every day of the year, but that he expected, if the cases wer truly cancer, not more than 5% would go over three years without a recurrence. This report is in accordance with that of some of our best known authorities. Fellow physicians, does this look as if we wer progressing very rapidly toward solving this problem? Would it not be better to sidetrack some of our old theories regarding cancer and begin anew? Surely our percentage of cures would be just as great as they ar now.

It has been proved by some of our best laboratory workers that putting the patient under the influence of ether or any other anesthetizing agent inhibits the protection that nature seems to throw about a malignant growth and allows metastasis to take place. Therefore is it not logical that if a cancerous growth can be removed without putting a person under an anesthetic we ar giving the patient many more chances toward an ultimate recovery without recurrences?

Some of our best authorities say that cutting into a cancerous growth "for a specimen" almost invariably means that the growth wil immediately take on new life and it wil increase with great rapidity, to say nothing about the fact that its chances of metastasis ar greatly augmented.

How many surgeons, after having excized a cancerous growth, prescribe "non-cancerous diet" or a diet that has a tendency to so righten metabolism that the *cancerous condition* of the patient is changed?

The "Pre-Cancerous" Condition

I am wel aware of the fact that our so-cald "authorities" on cancer (I mean the authorities who write our textbooks for college use) laf and even sneer when the term "pre-cancerous condition" is mentiond. In the name of common sense, why do they? There surely must be a condition existing in the patient *before* the cancerous growth can take on its cancerous nature.

It is generally recognized that irritation of any kind predisposes to the *location* of a cancerous growth, but if there wer no *pre-cancerous* condition we would all hav cancers, because all of us hav at some time had some local irritation like a nock, hurt or sore. Truly there must be a *pre-cancerous* condition or the cancerous condition could not develop. Then why not study the *pre-cancerous* condition, find out what it is, and treat the *individual* rather than to mutilate the body and do injury to the organism as a whole?

We often hear of "inherited tendencies" to cancer. I firmly believe that it is not a *tendency* to cancer *per se* but it is a *lowerd resistance*, and certain habits hav been handed down from parent to child—*habits that hav been predisposing to cancer.*

Perhaps if our foundation institutions would put more of their time and energy and the needed money to investigate this *pre-cancerous* condition and all that it means, we would know more about the *cause* of cancer and its ultimate prevention.

The Co-Existence of Cancer and Tuberculosis

It was formerly considerd that tuberculosis predisposes to cancer. Later it was considerd that no two diseases of "dynamic nature" could exist together—the less persistent disease having to giv way to the stronger. Some old theories even went so far as to say that no one with cancer could hav tuberculosis.

Another view was "the cancerous easily became tuberculous but the tuberculous did not easily become subject to cancer."

These various theories wer endorst by acknowledgd authorities on the subject.

From personal observation and the opinions gleand from scores of others interested in this work, I hav come to the conclusion that there is no real antagonism between tuberculosis and cancer. Recently experiments hav been made on mice to try to prove that there is some antagonism between tuberculosis and cancer. Personally I cannot believe that *mice and men* go wel together in this work.

Inasmuch as tuberculosis lowers the resistance of an individual, if a pre-cancerous condition exists, cancer is more liable to develop under such circumstances than if tubercu-

losis wer not present. The same holds true with cancer predisposing to tuberculosis.

I know from tests that I hav made that cancer and tuberculosis can exist not only in the same individual but in the same organ.

Etiology

Not known.

Symptoms

I do not know as very much can be said regarding the *subjectiv symptoms* of cancer. We hav often seen people with tuberculosis, syfilis, gonorrhea, and other intoxications who gave symptoms that wer almost "classical" for cancer, especially if they had any localized pain. From this it would seem that differential *subjectiv* symptoms of cancer wer wanting.

The *objectiv symptoms* of cancer, if it is located where it can be seen, ar at times quite typical, but at other times they ar so confused with lupus vulgaris or adenomatous conditions that one cannot say positivly that the growth is a cancer.

Some of the best cancer diagnosticians, who follow out the recognized laboratory methods, hav told me that there is really only one way of diagnosing cancer with certainty and that is by taking a section of it and examining it under the microscope.

On the other hand, some of the best laboratory specialists that I know hav told me that at times they ar at a loss to know from the specimen they ar examining whether the neoplasm is malignant or not.

From this it can be seen how uncertain the subjectiv or objectiv symptoms of cancer must be when following out the "academic" methods of diagnosis.

Diagnosis

From what has been said, it can be inferd that the "orthodox" method of diagnosing cancer is very haphazard, so much so that some of our best authorities claim that 70% of all neoplasms diagnosed as malignant growths ar benign.

I hav been very fortunate in discovering a screen for Bio-Dynamo-Chromatically diagnosing cancer or sarcoma.

The screen for diagnosing these malignant growths is what is known as my *B*-Chromatic Screen, which givs a "non-actinic orange" radiation.

The same screen that wil elicit the MM VR in tuberculosis wil also elicit the MM VR in cancer, that is, the *A*-Chromatic Screen. The *B*-Chromatic Screen, however, wil elicit an MM VR with cancer but wil not with tuberculosis. The fact that these two conditions—cancer and tuberculosis—ar diagnosed by "non-actinic" radiations givs us very much food for thot. Ar these two conditions not related? Bio-Dynamo-Chromatically, they surely ar.

If a person givs a *B*-MM VR and no abnormal growth can be found, we conclude that the patient is either in the pre-cancerous stage or that the cancer is within the body. If, however, there is an abnormal growth on the body of one giving a *B*-MM VR, we can very quickly prove whether that growth is malignant or not. This we do by auto-excitation or subject-excitation.

The Bio-Dynamo-Chromatic method of diagnosis is up to the present time the only method known for diagnosing cancer at its very incipiency or, in other words, diagnosing the *pre-cancerous condition*.

We often find patients who hav the cachexia of cancer and who giv the *B*-MM VR, but after appropriate "anti-cancer treatment" they giv a normal MM VR.

Treatment

In treating cancer, one must always keep this axiom in mind: *Treat the man that has the cancer rather than the cancer that has the man.*

I know that it is a popular belief (made so by the persistent efforts of surgeons) that cancer cannot be cured in any other way than by the nife, and that treating the *patient* has no special effect upon the cancerous growth itself. This I *know* is wrong. I hav known of cases, diagnosed as cancer by the very best diagnosticians of the time, which to all appearances wer cancers, that hav been entirely cured by appropriate dietetic and medicinal treatment.

Of course when the neoplasm is where it can be seen, it is best to remove it, but to remove it does not necessarily require a surgical operation with a *nife*.

Escarotic methods wil eradicate a cancer on the outside of the body with far better results than can possibly be done

with a nife. I hav seen many ladies who hav had a brest removed by escarotics that hav livd for years without any recurrence, and they died from some other cause.

Diet should be at once regulated in a person in a precancerous condition or with a known malignant growth. The diet that I prescribe for this condition is a true vegetarian diet, cutting out all salt and condiments. I prescribe all the spinach, lettis and greens that they can comfortably eat, as wel as boild onions, baked potatoes, butterd beets, carrots, fruit, and nuts. I prescribe all the distild water or reliable spring water they feel inclined to drink, or in place of this water I hav them drink red-clover tea or alfalfa tea, that is, tea made from red clover blossoms or from the tops of alfalfa that is in bloom. This tea can be made either from the dried blossoms and tops or from the green. An ordinary handful of dried tops should be steept in water that is kept just about at the boiling point for about 12 hrs. Then strain off and fil up with water to make about a quart. If the green leavs ar used, about twice the quantity is required and four hours of steeping is generally sufficient. I hav the patient drink this in place of any other drink.

Tobacco in all forms must be prohibited and as a rule tea and coffee should also be prohibited.

Keep the bowels wel open by means of senna-prunes or other kinds of laxativ food. Milk can be taken if *eaten* with a spoon, preferably along with some diluent to make it more easily digested.

In addition to the general dietetic and hygienic mesures, the following general fysical therapeutic mesures hav been proved to be very beneficial.

Probably the *actinic rays from the quartz, mercury-vapor lamp* (Quartz Light) shed over the entire body for a few minutes, being very careful about the tecnic, is one of our best aids.

Next comes the radiant light energy from the *powerful incandescent lamp* over the entire body.

Electric-light baths, oxygen-vapor inhalation, and the *B-D-C therapy* ar all valuable aids.

Owing to its wonderful aid in enhancing metabolism, probably the *magnetic-wave current* has a very beneficial effect.

Local treatment for the neoplasm itself, if it is an epithelioma, can be given by fulguration, CO_2 ice, or actinic

rays from the quartz, mercury-vapor lamp localized over the growth.

Massey's method of zinc ionization in the hands of an experienst operator wil do wonders in eradicating a cancerous growth on the outside of the body. The tecnic for this work is fully explaind in Massey's book on the subject.

Terpene Peroxid for small growths wil sometimes hav such an escarotic effect as to eradicate them.

For large growths, such as cancer of the brest, the safest plan is to hav them removed by appropriate escarotic plasters by an experienst operator. If this cannot be attended to at once, raying with the Quartz Light wil sometimes clear up the condition. I should advize, however, that a person suffering with true cancer of the brest should be attended to by one thoroly competent and accustomd to the work, as a novis is liable to overlook some conditions that an experienst man would not.

Formaldehyde Therapy for Cancer

Dr. Charles E. Walton of Cincinnati, Ohio, red a very interesting paper at the Surgical Gynecological Society of the A.I.H at Baltimore in 1916. This paper is recorded in the October, 1916, number of the Journal of the A.I.H. Dr. Walton mentions the use of 40% solution of formaldehyde for inoperable cancer of the uterus as wel as cancers about the face and elsewhere.

Dr. Walton's discussion is very interesting. He cites two cases of inoperable cancer of the uterus and says that under a general anesthetic they wer curetted and a gauze saturated with 40% solution of formalin was packt in the uterin cavity and left for forty-eight hours. After that time the gauze was removed and the upper part of the vagina and cervix wer mummified. In about three weeks a great sluf came away without bleeding. In the meantime the patient was without pain or discomfort. Patient doing wel.

For cancer of the cervix I know an application of formalin on a gauze, putting it inside a rubber womb cap and leaving it there for forty-eight hours, wil in many cases cure the cancer.

In using 40% formalin on the skin for any purpose, the operator must use a good deal of judgment and put it on very lightly because this is a most powerful escarotic and cuts off the blood supply and mummifies the tissues. Years ago

I carried out a long series of experiments with formalin solution and found that it would mummify live or ded flesh in an energetic manner. One singular thing I notist when using formalin on living tissue was that it did not cause pain, if it wer very lightly applied to the skin.

The *x-ray*, if properly administerd, is no doubt a great adjunct in the cure of cancer, but I doubt whether it wil cure any cancer, if used alone, without doing compensatory damage.

If the patient insists upon a regular *nife* surgical operation, some think the x-ray is a valuable adjunct *after* the growth has been removed, but I hav seen this tried so often and hav seen metastasis set in so soon that I am beginning to lose my former faith in the efficacy of this x-raying after an operation that required a general anesthetic. From what I now know of the Quartz Light, I would advize the use of that over the growth and over the entire body for two or three weeks *preceding* an operation requiring a general anesthetic. I believe this raying helps to prevent metastasis. *After* the "radical" operation, do the actinic raying again or use radiations from the powerful incandescent lamp.

Radium has many advocates, but whether it really is of any therapeutic value or not is a mooted question. I recently askt a wel known specialist in radium therapy if he would conscientiously recommend radium to anyone as a *cure* for cancer. He said that after all his years of experience with it he would say most emfatically *"no."* He further said that the only cases of cancer that he believd radium was really efficient in wer skin cancers, that is, epithelioma.

As before stated, many agencies wil eradicate epitheliomas.

As I hav seen for so many years the results of non-surgical methods in the treatment of cancers of all varieties, I am of the firm opinion that there ar other means for eradicating the local growth that ar superior to "nife surgery." When anyone says that a cancerous growth cannot be eradicated without the nife, it only shows his ignorance. For over thirty years I hav seen cancers (and *real cancers,* too) eradicated without anesthesia or knife, but in all these cases the *patients themselvs* wer treated as wel as eradicating the neoplasm. In many of these cases thirty years hav elpast and there has been no return of the growth in any part of

the body, and the patients hav livd in a normal, helthy condition.

In treating cancer, one must always keep this axiom in mind: *Treat the man that has the cancer rather than the cancer that has the man.*

Zone Therapy in Cancer

Zone Therapy has recently been proved to be very beneficial in the treatment of cancer. Whether zone therapy wil *cure* a cancer I do not know, but this much I am sure about, that is, that some cancerous growths ar in a location that makes them "inoperable." For example, a cancerous growth in some parts of the neck and throat, and in some regions about the hart and great blood vessels ar in a position that would make it impractical and very unsafe to use any form of operation, be it with the nife, caustics, or even destructiv ionization. Some such cancerous growths ar in a position to cause great pain, and the only relief the patient gets is a hypodermic of some analgesic such as opium or its derivativs, or some other drug.

I hav recently had the privilege of seeing patients who had "inoperable" growths and who had sufferd excruciating pain and consequent loss of sleep because of these neoplasms. These patients had been examind by several specialists who diagnosed the growth as cancer. By means of my B-D-C tests, I also diagnosed the growths as cancer. I hav seen fotografs of these persons when they first came under the care of their physician and I hav seen them after they hav been under the care of the physician for at least one or two years. One of these cases in particular had a growth on the side of the neck, which had been diagnosed as cancer. By the Bio-Dynamo-Chromatic method, I likewise diagnosed it as cancer. This growth was as large as an ordinary sizd orange and very hard and unyielding. The lady herself told me that she had not slept for months without some opiate until she began being treated by means of zone therapy or zone analgesia. For over two years this particular patient told me she had taken no opiates and had rested without any pain whatsoever when zone pressure anesthesia, according to the FitzGerald method, was used. When I saw this lady, the size of the growth had diminisht from this treatment, until it would not be recognized except by palpation.

I do not know whether zone therapy wil ever cure this

case, but I do know that it is making life endurable to the unfortunate victim. I hav seen a case that had been diagnosed as cancer of the larynx, and to which I gave the same diagnosis, that was being greatly improved and the patient made comfortable by the FitzGerald method of zone therapy.

That zone therapy is an adjunct in the treating of all forms of neoplasms, especially those that ar painful, is a fact beyond all speculation. I hav seen too many cases of neoplasms that wer benefitted by this method of therapy to doubt its efficacy. (See lecture on Zone Therapy.)

CLINICAL CASES: CANCER

Case 20

Miss H., 26 years of age, was brot to me for diagnosis as to the cause of continued uterin hemorrhage which began about three or four weeks previous. Family history alright. B-D-C examination showd her to hav a *B*-MM VR. Upon making a vaginal examination, I found a raspberry-looking mass about the cervix from which blood was constantly oozing. The bleeding was augmented by any friction over the mass.

Energy taken from this growth to a subject would elicit the VR when the patient-terminal was over eighteen inches distant from the lesion. A light shed thru the *B*-screen upon the subject immediately obliterated the reflex.

I advized zinc ionization for this growth and advized immediate treatment, as the strength of the energy coming from the lesion indicated a very activ process.

Contrary to my advice, the case was turnd over to a surgeon who said nothing but a nife operation would be of any use. He performd what was said to be a "successful operation," but the patient died within a few days.

A pathologist examind specimens from the growth and pronounst it "carcinoma of a very activ type."

Case 21

A physician brot a man to me for diagnosis. Aged 70 years. Had been a smoker for years. Family history gave no interesting information. This patient gave a *B*-MM VR and therefore I diagnosed the case as cancer.

Upon examining the right side of his neck, I found a hard lump. An examination of the buccal cavity showd a hard lump on the right side of tung. From this sclerotic area I was able to elicit a VR, by auto-excitation, while the patient-terminal was about eight inches distant from the part being examind. This energy was immediately dissipated by light past thru the diagnosing screen.

I diagnosed the case as epithelioma of the tung with involvment of the cervical glands on the right side of the neck. Several microscopical examinations wer made from this lesion on the tung and the pathologist pronounst it epithelioma.

For this case I advized cataforesis for the lesion, radiations from a 2,000-candle-power lamp over the neck, oxygen-vapor inhalation with B D-C therapy. I lost track of the patient and do not know whether the physician carried out these directions or not.

Case 22

A man about 50 years of age was sent to me for diagnosis. He gave a *B*-MM VR. On the right side of his face I found a localized discoloration from which I could conduct energy that would elicit a very decided VR in the patient himself by auto-excitation. I diagnosed the localized area on the face as epithelioma. A pathologist made a microscopical examination of "scrapings" from this area and pronounst it epithelioma.

Case 23

Mrs. S., about 50 years of age. Family history not interesting. Complaind of a sore spot over the anterior wall of the stomac. Also complaind of burning sensation in the stomac within an hour or so after eating.

This lady gave a *B*-MM VR. From the sensitiv area over the stomac I was able to conduct energy to a subject while the patient-terminal was eight inches from the patient. This energy was immediately dissipated by means of the diagnosing color. I diagnosed the case as cancer of the stomac.

A surgeon operated on this patient and excized what he said was a cancerous growth on the anterior surface of the stomac. This was examind by pathologists who pronounst it "carcinoma."

Case 24

A man 70 years of age was brot to me for diagnosis. His family physician said he had a cancer of the rectum and advized a surgical operation.

This patient gave a normal MM VR, and consequently I said it was *not* a case of cancer. The area in the rectum that had been diagnosed as "cancer" proved to be a benign ulcer, which was quickly cured by nascent iodin locally (KI

and O_3 method), along with oxygen-vapor inhalation and B-D-C therapy.

Case 25

One of my pupils reports a man sent to his institution to be operated on for cancer of the rectum. As he gave a normal MM VR, the physician would not operate, but treated the rectal sore as he would a simple ulcer, and the patient made a rapid recovery.

Case 26

A lady 72 years old was referd to me for diagnosis and treatment. The case had been diagnosed as epithelioma by five specialists. She gave a very decided *B*-MM VR, and localized energy (by auto-excitation) from the growth on the right side of the face elicited the VR, which was immediately dissipated by the diagnosing color.

I used a compress of terpene peroxid on the growth for about ten days, and followd that with a flaxseed poultis for about five days. I then instituted the 2,000-candle-power light therapy over the face and chest for about 20 minutes daily. During all this treatment, the patient receivd oxygen-vapor inhalation along with the B-D-C therapy 40 minutes daily. At the end of two months' treatment the growth was entirely obliterated, the skin normal, and the general condition of the patient better than it had been for years, tho she continued to giv a *B*-MM VR. Within two years from the first treatment the growth returnd, but is being held in check by the same treatment. Notis the age of the patient.

I might ad that in all such cases I push elimination to the very limit.

Case 27

A woman about 70 years of age was referd to me for bleeding from the uterus. Upon examination, this patient gave a decided *B*-MM VR, and localized energy from the lesion at the cervix would elicit the VR in a subject. This VR was immediately dissipated by the diagnosing color.

I found an old laceration about the cervix which had been there for forty years. One side of the cervix showd a growth that looked like a red raspberry.

I placed a terpene peroxid compress over this growth, covering the lower part of the compress with oild silk and packing the vagina with a wool tampon. I changed this

terpene peroxid compress daily for two weeks, after which I began using medicated tampons. This tampon I left in 22 hours each day, the patient taking it out each morning before coming to the offis and using an antiseptic vaginal douche.

Within three weeks from the first treatment, the growth entirely sluft away, and much of the tissue about it also broke down. This was replaced by normal helthy tissue.

Along with this local treatment I gave the patient oxygen-vapor inhalation with B-D-C therapy every day for 40 minutes. At the end of two months I considerd the patient entirely wel, and her general condition, she said, was better than it had been in years. (No return for three years.)

If the terpene peroxid compress had not brot about an activ enuf inflammation to destroy the neoplasm within a few days, I would hav applied a more vigorous escarotic.

Case 28

Within the past four years I recall especially thirteen other ladies, ranging in ages from twenty to sixty years, who hav been referd to me to be treated for "cancer" in the brest. They each had "lumps" in one or two brests and had been diagnosed by the common methods as being cancerous. Removal of the "afflicted member" was advized by their family physician or surgeon. According to my B-D-C method I could say with certainty that not one of the thirteen referd to had cancer. After proper treatment for from one to three months, each one of these thirteen patients had no sign of a "lump" left in the brest, and they hav had none since.

Case 29

A man 55 years of age was diagnosed by several wel known surgeons as having cancer of the rectum and an operation was advized. He was referd to me for diagnosis, and according to my B-D-C method he had no cancer, but a simple ulcer. I outlined a natural method of treatment and he was cured and has remaind cured for over three years.

Case 30

A man about 50 years old had a sore on the under lip. It had been diagnosed as a "syfilitic sore." According

to my B-D-C method of diagnosis it was a cancer. It was treated as a cancer and was cured, and the patient has remaind cured for over four years.

Case 31

About four years ago a physician brot three ladies to me for diagnosis, Each one had "lumps" in the brest. Each patient had been diagnosed by surgeons as having cancer in the brest. According to my Bio-Dynamo-Chromatic method, I diagnosed two of the three cases as having no cancer, but simple enlargements in the brest. The other I diagnosed as being a *beginning* cancer, that is, the "lumps" had begun to giv off "cancer energy."

I advized the doctor to use powerful light over the brests of each one for half an hour daily and follow that by oxygen-vapor and B-D-C treatment.

Within three months the two whom I diagnosed as being non-cancerous wer entirely wel and all signs of "lumps" had disappeard. The one whom I diagnosed as having beginning cancer, was cured in about nine months, and no signs of "lumps" in the brest could then be found. All three cases hav remaind in perfect condition over three years.

Case 32

A lady past forty years of age diagnosed by experienst surgeons as having cancer of the stomac, and operation advized at once "to save life." Her friends induced her to hav me examin her. My B-D-C diagnosis was no cancer but ulcer of the stomac. I treated her for about three months and pronounst her wel. She has remaind wel for over eight years, proving my diagnosis to be correct.

Case 33

Lady thirty-five years old. "Lumps" in both brests. Surgeons had diagnosed them as cancerous and total removal of both brests advized. Her husband had red of my method of diagnosis and sent her from the east to see me. My B-D-C method showd she had no cancer, but incipient tuberculosis. I treated her daily for three months, after which time all signs of "lumps" in the brests disappeard and her general helth could be cald about perfect. She has remaind wel for over three years.

Case 34

A lady 28 years of age complaind of too frequent bleeding from uterus. According to my B-D-C method I had to diagnose her as having "advanst, inoperable cancer of the uterus." She went to a surgeon who advized operation. She was operated upon, but died within two weeks.

(Note—I could cite hundreds of similar cases. They all prove that 70 per cent. of the diagnoses of cancer by the "regular methods" ar wrong.)

I could mention very many other similar cases that hav been brot to me for diagnosis and treatment. The diagnoses hav as often as possible been checkt up by other laboratory methods. In every instance the B-D-C diagnoses hav been found to be correct.

Case 35

One of my pupils reports the following case:

"One of my patients had been operated upon for cancer of the tung. After the operation he was in great distress because he could not eat. He could not bite at all without suffering great pain. He had been under opiates some time, which made his general condition worse. It occurd to me to see what I could do with zone therapy. By making firm pressure over the proper digital zones, this patient was, within three minutes, able to clench his teeth together without any pain. I used no suggestion whatsoever, and the patient did not know what I was trying to do.

"Zone analgesia supplanted morfin in this case. Later the patient died, but both he and his wife wer grateful for the relief zone analgesia had given him."

Case 36

Another of my pupils reported that by means of the Bio-Dynamo-Chromatic method of diagnosis he was able to differentiate between an ulcer of the stomac and a carcinoma of the stomac, which by any other means would hav been practically impossible. An operation proved that the diagnosis of carcinoma was correct.

Case 37

P. C. Jenson, M.D., Manistee, Mich., reports:

Married lady 50 years old. Appeard in July, 1917, with a hard tumor in left brest which she had notist for five

years. It had become quite annoying as she had intermittent and nawing pains, and it had also grown considerably in the last few months.

According to your B-D-C method of examination, she gave a *B*-MM VR, and I diagnosed the case as carcinoma. I recommended immediate operation, and the bacteriological findings wer those of cancer.

By your B-D-C method of diagnosis I am able to diagnose cancer at its very inception and only wish this lady had come to me long before. However, she is doing very wel.

Since the foregoing case reports wer put into type, I hav receivd over thirty cancer reports from physicians using my Bio-Dynamo-Chromatic method of diagnosis. With one accord they giv reports that no one, who was not familiar with this method, would believe. I could not believe them myself had I not been using this method of diagnosis for so many years. I feel sure that this system of diagnosing is alredy saving thousands of "cancer victims" every year, and I hope for the sake of *Humanity*, that the great work wil continue to grow.

Fellow physicians, don't scof! Don't ridicule what you know nothing about just because it is not as you wer instructed "in college!" Investigate, not so much for your own good, as for the good of *Humanity!*

(*For more case reports see Lecture XXIII of this Part One and also Part Three, Lecture I—Diagnosis as a Specialty.*)

SYFILIS, AUTO-INTOXICATION, MALARIA

C-MM VR

My reason for putting these three conditions under one hed is that the three conditions wil elicit the *C*-MM VR, or what I used to term the "blue" MM VR. As I hav never seen a case of syfilis that did not hav auto-intoxication concomitant with it, I hav not yet been able to make a Chromatic Screen to differentiate syfilis from auto-intoxication. For malaria, which also givs a *C*-MM VR, I hav a differentiating Chromatic Screen—*F*.

My experience is that we very seldom, if ever, find a case of syfilis without other toxemias with it. Not only do we always find auto-intoxication, but we nearly always find gonorrheal intoxication with it. This is spoken of more fully when discussing gonorrhea.

I hav now come to the conclusion that if a patient persists in having auto-intoxication, in spite of fair treatment and diet, he has syfilis. Other observers, using other methods, tel me they think the same.

ETIOLOGY

The etiology of syfilis is universally conceded to be the *spirocheta pallida,* the more scientific name of which is *treponema pallidum.* I do not think that is at all a satisfactory explanation for the etiology of this great malady. The question immediately arises, *What causes the spirocheta pallida?* In looking over one of my most recent reference books on this complaint, I see that the author says that the spirocheta pallida is "thot to be concernd" in the causation of syfilis. This shows that the most recent authorities on the subject ar a little doubtful as to the etiology of syfilis after all.

We all know that syfilis is one of the so-cald "social diseases" probably because it is supposed to be causd by social or, in better terms, sexual intercouse. I am quite certain

that many people whom I know ar suffering from syfilis hav never gotten it from sexual intercourse. No doubt the disease can be carried from improperly washt eating and drinking vessels, by hanging to contaminated straps in cars, or by taking hold of any object, even money, that has been contaminated by syfilitic excretions. It seems as tho the unbroken skin wer a safe protection against syfilitic contamination, but so many hav abrasions on the skin that they may be the port of entry.

I hav seen what appeard to be, and what gave every reaction for a chancre, on the toe of a young girl. She had not been barefooted outside of her home. It may be she was contaminated thru the shoes. I mention this to show how fogd the *real* etiological factor of syfilis is.

A controversy that wil grow more and more is: *Does the germ cause the disease or does the germ grow in the soil best suited for it?* This is discust more under the hed of "The Germ Theory." If every one who came in contact with either ded or live matter that had been contaminated with syfilis had syfilis, then probably we would all hav it. Some claim we all do hav it in some form or other but I do not believe that. In fact, I *know* it is not so.

Vaccination even at the present day is no doubt an etiological factor in some cases of syfilis. I immediately hear some of my readers say that vaccination *used* to be a factor, but that it is not so *now*. On this score I shal hav to differ. I hav seen cases of children that never had a symptom of syfilis until after *modern* vaccination for smallpox. I do not pretend to know *how* it could happen with "modern tecnic," but remember that some so-cald *modern* methods hav the *venom of "kultur"* in them.

Some of you wil ask, "How ar we to remedy this great curse?" Which do you mean, syfilis or vaccination? My reply is that I would advize the distilling of *"kultur"* out of all our "modern methods" and begin over again.

Symptoms

In such a work as this I cannot enlarge upon the symptoms of syfilis. Large volumes could be written on the symptoms of syfilis, and many large volumes giv a great deal of space to it. There ar a few points that I wish to bring out. One is that a person can hav syfilis and never be cognizant

of an initial lesion of any kind. Syfilis can gain entrance into the body without producing what is termd a *hard chancre.*

Whether there ar different types of the disease cald syfilis, I do not know, but I am inclined to think so. At any rate, we all know that syfilis in some people seems to attack the spinal cord while with others it apparently attacks the vascular system, and in others it seems to have a predilection to the osseous tissues and joints. It may be that its electiv site for devastation is the weakest part in the individual. That is only a supposition. I certainly cannot explain it and hav found no one who can explain it satisfactorily.

I hav seen many persons, whose occupation brot them in contact more or less with mercury, who had symptoms almost identical, if not exactly identical, with syfilis. Others who wer suspected of having syfilis I hav seen years after they wer treated with salversan when they had all the symptoms of syfilis. Whether the drugs causd the symptoms, I do not know, but these ar the facts.

Stomac symptoms ar often the first that send the patient to consult a physician.

Diagnosis

At the present time I know of only one reliable method for diagnosing syfilis, and that is the *Bio-Dynamo-Chromatic method.* A person suffering with syfilis givs a *C*-MM VR. So does auto-intoxication, and so does malaria. *Malaria* can be differentiated by means of the *F*-Chromatic Screen. To differentiate between syfilis and auto-intoxication, I put the patient on strict vegetarian diet, perhaps having a three-day fast precede it, clear the bowels out wel with salines, and get the patient in as fine condition as possible. Then in about two weeks I test again. If, with the urin showing no indican and the intestinal tract wel cleard up, they stil giv a *C*-MM VR, I diagnose the case as syfilis.

I never tel a patient how they hav contracted the disease because I do not know. If they know, it makes the confirmation of the diagnosis all the easier. *To tel everyone who givs a reaction for syfilis that they hav had sexual intercourse with someone who had syfilis is an outrage.*

The *Wassermann reaction* used to be considerd the only true diagnostic test. I do not think there ar many progressiv physicians at the present time who believe this. From my experience with syfilis and the Wassermann test, I am

frank to say that I put no reliance upon the Wassermann or any similar test. When five or six of the very best known syfilologists in the United States wil make consecutiv tests and three of them may say the test is positiv and two that it is negativ, it is very good proof that the test is only a *guess*. There must be some other condition which givs a positiv or negativ reaction as the case may be.

Blood Tests other than the Wassermann ar from time to time exploited, but all ar soon found unreliable.

Locating the Initial Lesion

I do not know as it is of any special importance to locate the site of the initial lesion in syfilis. It is, however, quite an interesting fact to observ that if one has had a hard chancre on any part of the body, energy can be conducted from that lesion, either by auto-excitation or by subject-excitation; and this lesional energy wil be dissipated by radiations from the *C*-Chromatic Screen.

Case 38

To show the wonderful accuracy of this system, I wil relate the case of a man who gave a VR for a mixt infection of syfilis and tuberculosis. Over the sacral region I could conduct energy by auto-excitation, and this lesional energy was dissipated by the *C*-Chromatic Screen. From an area in the upper lobe of the right lung I was able to conduct energy also by auto-excitation, which was dissipated by the *A*-Chromatic Screen. Later developments proved this man to hav tabes dorsalis and tuberculosis, the tuberculous lesion being in the upper lobe of the right lung.

Treatment

We all know the popular method of treating syfilis. That is by *mercury rubs and potassium iodid medication,* some using the so-cald mixt treatment. Just how much lasting good the mercury treatment givs, I am not prepared to say. Personally I do not use mercury to any great extent, but think that iodin medication, as given under Iodin Therapy and sulfur as given under Sulfur Medication, ar great adjuncts in treating this disease.

Along with the iodin therapy or any other therapy that I might think advizable, I never neglect to use *oxygen vapor*

and the *B-D-C method* of treatment. The object is to enhance metabolism, which appears to be greatly impaird by syfilitic intoxication.

Another most valuable adjunct is the use of emanations from the *quartz, mercury-vapor lamp* (Quartz Light), using it over the entire body and especially over the spinal cord. This, too, has a most marvelous effect in enhancing metabolism.

For the paralysis that often is concomitant with syfilis, I use the *pulsoidal current.* For the incontinence of urin that is often found with this condition, I also use the pulsoidal current thru my bi-polar rectal electrode, using soluble, stainless iodin as a lubricant.

For paralysis thru the legs or arms, I use the pulsoidal current or the slow-sine current thru vessels of water, as illustrated in the chapter on Pulsoidal Therapy.

One particular point that I hav observd in treating tabetic paralysis thru the rectum is that if I giv *lateral* pressure to the electrode, the bowels wil move then and there, but if I giv anteroposterior pressure, it seems to hav no effect. I hav come almost to regard this as a diagnostic mesure, as I hav never notist it in any other condition. I would be glad to hav others take cognizance of this little maneuver and let me hear from them about it.

Electric light baths ar very useful as an eliminating agency in treating syfilis.

Radiations from the powerful incandescent lamp ar also of great benefit, especially with the *Quartz Light.*

The magnetic wave current is also very beneficial in treating syfilis. Some go so far as to say that they get better results from that modality than from any other one modality. I use it and I think it benefits my patients.

The aim of any treatment is to rectify metabolism, and any agency that wil best rectify metabolism and at the same time destroy the causativ factors in this dred disease should be thot of.

Another procedure that may be new to some is treating the site of the infection by *electrolysis,* using mercury at the positiv pole. I hav never used this method, but some who hav tel me it is very beneficial.

If any of my readers ar especially interested in the treatment of syfilis by means of the *inunction method,* I would advize them to read a little work entitld "The Inten-

siv Treatment of Syfilis and Locomotor Ataxia by Aachen Methods," by Dr. Reginald F. Hays of London, sold by the Chicago Medical Book Co., Chicago. The methods outlined can be carried out under the direction of any physician. Dr. Hays says that of all methods that he knows for treating syfilis, none can compare with this systematic inunction method. Physicians report to me that this inunction method, along with the powerful incandescent lamp and sulfur medication thru the skin, has been very beneficial in the treatment of locomotor ataxia.

As many physicians hav been inoculated while treating syfilis, it might be wel for me to mention the discovery by Metchnikoff. That is, if shortly after "inoculation with the spirocheta pallida," the site of entry is wel rubd with a 40% calomel inunction, it is quite likely that no further symptoms wil develop. As Dr. Hays puts it, "That this fact with its many possibilities of application ought to be very widely known, appears to be, for numerous reasons, highly desirable."

In a foren medical journal Boas, among other cases, givs two reports which ar extremely instructiv.

He says at the very first sign of trouble (a hard ulcer in the genitals with swelling of the groin on one side) he gave a thoro course of one intra-muscular and one intravenous injection of Salversan (0.6 and 0.4 gm.) and 50 inunctions with mercury.

The young men returnd for inspection and the Wassermann test once a month during the first year thereafter and at alternate months during the second year. There wer no symptoms of the syfilis after the first year and the Wassermann test was constantly negativ thruout.

After a period of two years and three months in one case and of three years in the second, one young man developt extensiv ulcerated papules on the tonsils with syfilides on the trunk and genitals; while the other developt large ulcerating papules on the scalp, in the secretions of which the spirocheta pallida wer found. At this recrudescence of the syfilis there was a faint Wassermann reaction in both cases.

Boas makes these significant remarks: *Re-infection after all is the only scientific proof that syfilis has been cured,* and re-infection in these two cases was out of the question. It is discouraging to find that a period of latency lasting for three years after a thoro abortiv course of treatment under apparently the most favorable conditions does not

afford any certain garantee that the disease has been cured.

Boas' findings ar in accordance with my own experience and with that of scores of physicians with whom I hav come in contact.

How long wil the medical profession be camouflaged by "Kultur" in the treatment of syfilis as wel as in the treatment of other diseases?

Salversan I mention under the hed of "treatment" only as a warning to let it alone. Of all the imported devices, concoctions, or chemicals for treating syfilis, from my standpoint I think Salversan has been one of the greatest humbugs. I may be wrong on this but I hav had an opportunity to watch the use of this drug ever since it was so widely "ethically" advertized in America. Some of those who wer formerly its most enthusiastic exponents now tel me that they would giv anything if they could rectify their great mistake. Old users of this drug tel me that for a time the patient *appears* to be greatly improved, but that later, sometimes several years even after the treatment, new symptoms of syfilis return and in a greatly aggravated form.

I think the time wil come when Salversan wil be clast as one of the many "Kultur" products so adroitly exploited.

In this connection I might say that if an American physician gets out any secret formula and tries to advertize it among his own people, he is immediately branded by the socald "ethicals" as a quack. Yet some foreners, who perhaps ar really enemies to America, wil under the guise of "scientific information" flood this country with their advertizing in exploiting some of their concoctions; and these same "ethicals" wil use their product and help to exploit it.

I may be a "little old-fashiond" in my ideas, but I think if every real *American*—not "Hyfenated American"—would boost for AMERICA and AMERICAN-born products and try to elevate AMERICAN ideals rather than aping German-born or German-stolen ideas, or products, Kultur would lose its place in the galaxy of "Regular Medicin."

Would this not be a good time for every loyal physician to resolv to never again use nor recommend any so-cald remedy originated by, or exploited by, enemies of AMERICA?

CLINICAL CASES: SYFILIS

Case 39

A man having pains which had been diagnosed as "neurotic pains" went to New York City to be tested by one of the best known syfilologists there. The reaction was given as positiv. He then went to Boston and there the test was found to be negativ. Not being satisfied, he went to Philadelphia, and there the test was found to be negative. Stil unbelieving, he went to St. Louis where the test was said to be positiv. He went to Chicago and had two tests, one of which was negativ and one positiv. He went to two other specialists in two other states and they gave opposit findings. He came to me and I found that he gave a decided *C*-MM VR. I diagnosed the case as syfilis. Inasmuch as he was in very fine condition fysically outside of the "neurotic pains," I ruled out auto-intoxication from the start. He said he thot he had had syfilis at one time but did not know. One year after the diagnosis, the man was suffering from tabes dorsalis and lightning pains, so that no one could fail to make a diagnosis of syfilis.

Case 40

Another case that shows the unreliability of the Wassermann or other blood tests. (There ar other blood or serum tests under different names.) This man gave symptoms of what had been cald "lightning pains" and had been to several syfilologists, some diagnosing it by the Wassermann or other blood tests as positiv and others negativ. When the man came to me he said he was disgusted with the methods of diagnosing cald "authoritativ" and wanted to see what my Bio-Dynamo-Chromatic system would show.

He gave a normal MM VR and I told him I *knew* he had no syfilis. This was a case of *hysteria* brot on by *syfilofobia*. Time has practically proved that this diagnosis was correct.

Case 41

Another case was that of a married woman about 30 yrs. old who was sent to me for diagnosis. She gave a C-MM VR. She complaind of pains in the back with a num feeling in the thighs. She had been diagnosed as giving a negativ Wassermann. She said she had never been exposed to syfilis and the diagnosis was stoutly denied. Within one year she had symptoms of tabes and there was no doubting the diagnosis.

Case 42

About four years ago a doctor presented himself for diagnosis. He complaind of persistent hedakes, no appetite, melancolia, and a peculiar "woody sensation" about the lower half of his body. He gave a C-MM VR, and I diagnosd the case as syfilis, after having satisfied myself that it was not auto-intoxication.

The physician gave no syfilitic history but when I told him my diagnosis, he said he rememberd many years previous of having receivd a wound on one of his hands while he was examining a woman, whom he afterward found had syfilis.

This doctor afterward had five Wassermann tests made, three being "negativ" and two "positiv. All wer made by the most reputable men.

Later the symptoms of tabes developt very rapidly, and no one could doubt my diagnosis.

Case 43

About three years ago a man was sent to me for diagnosis. He had had several Wassermann tests, some being "negativ" and some "positiv." This man said he did not know that he had ever been exposed to syfilis, altho he "might hav been" years before. He gave a C-MM VR. I commenst treating him with salines and other eliminants. Within three weeks I tested him again and found he had a normal MM VR. I diagnosed the case as neurasthenia without any signs of syfilis.

As this man has entirely recoverd from his supposed syfilitic intoxication, I think there can be no doubt as to the correctness of the diagnosis.

Case 44

A married woman about 40 years of age was sent to me for diagnosis and treatment. The only symptoms she gave wer nervousness with persistent occiptal hedakes. She gave a very decided *C*-MM VR and, altho I tried very many other screens, none except the *C*-Screen would elicit the VR in the magnetic meridian. As this patient's general condition showd that she had good elimination and that her bowels wer wel taken care of, I diagnosed the case as syfilis. At first she seemd surprized, but later admitted that her first husband had had syfilis and their only child, who was about 20 years of age, had all the symptoms of hereditary syfilis.

This woman finally admitted she had had several Wassermann tests made by reputable men in various parts of the country, some of them being wel known authorities on this work. Some of the tests wer "positiv" and some wer "negativ." It was for that reason that she was sent to me for Bio-Dynamo-Chromatic diagnosis.

Case 45

A doctor in the Middle West recently presented himself for diagnosis, saying he had no special symptoms, but wanted to know whether he had a normal MM VR. He gave a decided *C*-MM VR. As his general condition was so good, I diagnosed the case as syfilis. He then told me that a few weeks previous, while operating upon a woman with syfilis, he had injured his hand. On his hand I found a chancre from which I could elicit the VR by auto-excitation and by subject-excitation. This energy was dissipated by the *C*-Chromatic Screen. This doctor said he felt confident that he had been infected, but wanted this test made to see whether it wer reliable.

Case 46

About a year ago a doctor presented himself at one of my clinics for examination. He gave no special history except that of nervousness and melancolia. He gave a very decided *C*-MM VR, and as he said his general elimination was in fine condition I diagnosed the case as syfilis. He said that thirty years before he was inoculated while doing clinical work in one of our eastern hospitals, after which a hard chancre appeard on his finger and had apparently been cured.

He had had a course of mercury inunctions as wel as a course of mud baths.

By further testing this doctor I found that many of his reflexes wer absent and that he had an Argyll-Robertson pupil. There is no doubt that the diagnosis was correct.

I could mention scores of other cases that I hav tested in the past few years that hav given a *C*-MM VR, in which other methods and time hav made very evident that the diagnosis of syfilis was correct.

I hav also examind a great many who wer supposed to hav syfilis, owing to the Wassermann reaction, that by the B-D-C method of diagnosis I was reasonably sure did not hav it. After they had receivd treatments along general lines for enhancing nutrition, as wel as getting their minds right, their condition became normal and has remaind so.

Syfilis is one of those infections that a person may hav for years and not know it. It is also one of those insidious diseases that may attack a person without any known exposure.

Many persons ar said to hav syfilis who do not hav it, and many ar said not to hav it who do hav it. It is for this reason that we should be very cautious in making a diagnosis of syfilis .

Inasmuch as I hav had such success myself, and hav receivd so many reports from those who ar using these methods, I cannot help but think that many of the so-cald cases of syfilis can be made normal by the methods set forth for the treatment of this disease.

Case 47

One of my pupils reports the following case:

"Mr. B., 28 years of age, was sent to me for diagnosis and treatment. He had been treated for several months by another physician for gonorrheal reumatism.

"By means of the Bio-Dynamo-Chromatic diagnosis I found this man did not hav a normal MM VR. Neither did he giv a *D*-MM VR, but he gave a very decided *C*-MM VR. Consequently I diagnosed the case as syfilitic. The way he is responding to syfilitic treatment proves most conclusivly that your Bio-Dynamo-Chromatic method of diagnosis is reliable and can be used to advantage by pupils without very many months' experience."

Case 48

About nine years ago a man 33 years of age was sent to me to be relievd of spasmodic, sub-occipital hedakes. The history of the young man was: Married, no children, complaind of voracious appetite bordering on bulimia. Possest remarkable muscular strength; blood pressure 220; very nervous in his actions. This "maddening hedake" would come on in the middle of the night and within an hour or so he would hav a violent attack of vomiting. These hedakes had been tormenting him for about six months.

Upon testing the urin I found true albumin as wel as granular casts. He gave a *C*-MM VR.

I put him on a very rigid milk and vichy diet for three weeks and tested him again. Stil the *C*-MM VR persisted. From the occipital region I obtaind energy three or four times as great as a normal individual would giv. This energy was dissipated by the diagnosing screen. I told the patient that he must be suffering from syfilitic infection. At first he denied it, but later admitted that he had been exposed to "something that might be contagious," and he had had a very sore throat, for which he had taken potassium iodid which had cleard it up.

I diagnosed the case as gumma of the brain concomitant with Bright's disease. When his relativs lernd of the diagnosis, they wer indignant and wanted other diagnosticians to examin him. He was examind by a very wel known diagnostician in New York City and he also pronounst the case syfilitic infection with probable brain gumma. Within a few months this patient's mind began to fail and he died in an apoplectic stroke.

Case 49

The wife of the man abov mentiond came to me complaining of a persistent sore throat, which gave her voice a very husky sound. She gave a decided *C*-MM VR and I began treatment with iodin. I also gave oxygen-vapor inhalation and the radiations from the 500-candle-power lamp (which was the largest made at that time) over the throat.

About the external labia there was a scar which I believd was syfilitic. From this lesion I obtaind energy about four times as great as normal, which was dissipated by the diagnosing screen. I gave blue ointment to be used on this lesion. Knowing the history of her husband, I felt sure the

diagnosis in both cases was correct. I treated these two patients without letting one know the diagnosis in the other case, but gave them advice applicable to the circumstances.

Within six months after the husband of this woman died, I pronounst her wel. Altho it is over eight years since I gave these treatments, which lasted about a year, this woman has not had a return of the symptoms that would giv anyone an idea that she was syfilitic, and I believe she is cured of the disease.

Case 50

About five years ago a married woman about 28 years old was sent to me for diagnosis. She gave a *C*-MM VR. She complaind of pains in the back with a num feeling in the thighs. After three weeks' treatment with salines, I diagnosed the case as syfilis. As the patient had never been exposed to that disease to her knowledge, the diagnosis was disputed. Within one year she had all the symptoms of tabes and there was no disputing my former diagnosis.

Case 51

A man about 40 years old had been treated for "dyspepsia" or "ulcer of the stomac" for several years. He was referd to me. My B-D-C diagnosis was syfilis. Suitable treatment proved my diagnosis to be correct and the patient was relievd of his stomac trouble.

Right here I want again to mention the fact so often overlookt and that is that *"stomac troubles"* ar often the leading symptoms of syfilis. I do not want to be understood as suggesting that all who hav persistent dyspepsia or other stomac symptoms hav syfilis, but I want to call your attention to this "leader" that is most often overlookt.

See lecture on "Diagnosis as a Specialty" for other cases.

Auto-Intoxication

Altho auto-intoxication givs the *C*-MM VR, it can be cleard up within a few days by systematically increasing the elimination of the patient. This seems to be best accomplisht by administering some saline laxativ. For this purpose I hav found *Salithia* and *Sodoxylin* the best. Both ar manufactured at the Abbott Laboratories, Chicago.

Many times *C*-MM VR can be cleard up within one week if it is causd by auto-intoxication. Use every means at your command for righting metabolism.

Diet probably plays the most important part in auto-intoxication. Cut the diet down to a minimum and, as a rule cut out meats.

Tobacco in any form is often the prime cause of auto-intoxication and, "if possible," should be abstaind from while clearing up the system.

Alcohol produces *auto*-intoxication as wel as "the other kind." Alcohol in every form should be abstaind from, if one wants to righten metabolism. It is a great mistake for any physician to prescribe alcohol in any form.

Oxygen-vapor inhalation with *Bio-Dynamo-Chromatic therapy* ar very valuable for the treatment of auto-intoxication.

Electric Light baths act as an eliminant as wel as the *powerful incandescent light,* and should not be forgotten.

The Quartz Light is coming into great favor as a systemic therapeutic agency. It should be radiated on the *whole* body for enhancing general metabolism.

The Magnetic-Wave current, inasmuch as it rectifies metabolism, I find is a valuable adjunct.

I wil not cite here any special cases of auto-intoxication which hav given the *C*-MM VR, as they hav been so numerous. Many cases which had indican in the urin, and those which did not hav, but which gave all the symptoms of a general toxemia and the *C*-MM VR, hav been entirely cured by means of radiations from the powerful incandescent lamp, quartz light, electric-light baths, oxygen-vapor inhalation, and B-D-C therapy.

Of course dietetic and hygienic mesures must always play the leading part.

GONORRHEA—SPECIFIC URETHRITIS

D-MM VR

DISCUSSION

It is wel known by all physicians and by almost all educated people that a gonococcus known as the gonococcus of Neisser is the indisputable diagnostic sign for gonorrhea. So firmly convinst is the physician, as wel as the laity, that gonorrhea cannot exist unless the gonococcus of Neisser is visible under the microscope that many wil even dispute the diagnosis of gonorrhea unless the diplococcus gonorrheae can be found. If one physician should tel his colleags that the disease could exist without any ocular proof that the micrococcus gonorrheae is present, he is at once lookt at with a scrutinizing eye as much as to say, "Hav you gone crazy?"

The standard texthooks tel us that gonorrhea is causd by the specific micro-organism known as the gonococcus of Neisser and that the disease is markt by pain, ardor urinae, and muco-purulent discharge, and that this micro-organism gains entrance to the genital mucous membrane mainly by sexual congress. They also tel us that gonorrhea may pass away without any serious result or it may become cronic and involv the sub-mucous tissue, producing stricture, gleet, etc. They tel us that gonorrhea is frequently attended with complications such as prostatitis, epididemitis, orchitis, cystitis, urethritis, and endo-carditis.

Authorities also tel us that this disease is so common that familiarity with its variable symptomatology can be taken for granted. They also tel us that typical gonorrhea is a self-limited disease and has a tendency toward complete recovery. They say that if gonorrhea is let alone it wil get wel of its own accord the same as a cold in the hed. Some go so far as to say that the unfortunate sequellae of gonorrhea would not take place if the patient wer let alone, while others say that there would be no bad after effects if the case wer "properly treated."

In fact, owing to the prevalence of this terrible disease, many authorities say that 90% of all males had it, hav it, or wil hav it. They also say that at least 80% of all the diseases peculiar to women ar causd by gonorrhea.

Now, with all this knowledge, or supposd knowledge, at hand nothing seems to be done to lessen the prevalence of the disease. The public press is constantly waging war against the "great *white* plague, tuberculosis," but hardly ever is a word said about the prevalence of the "great *black* plague" which no doubt has causd, is causing, and wil cause more destruction to human life and its possibilities than any other disease ever known. Why is this state of affairs? Why ar the young not educated along such lines as to make them aware of the great human ulcer that is killing or crippling more people than all the wars combined?

Fellow physicians, is not the blame in a great mesure to be laid at our doors? How many, when a case of gonorrhea presents itself, tel the young man the great danger that he has run, just what consequences this disease may bring forth, and that it is his duty to tel his comrades of the danger so they wil not fall into the same error he did? On the other hand, how many ar guilty of telling the young man that gonorrhea is "nothing," "every young man has it," "it is no worse than an ordinary cold," or something to that effect? How many ar guilty or slapping the young man on the back and saying, "Old man, you ar up against it, but it is nothing. Forget it." How many ar guilty of telling young women that they must not expect to marry a man who has not had gonorrhea because they hav all had it?

Ar we doing right in dealing with this *great black plague?* Because some may hav been at some time contaminated with this dred disease, why should they make light of it? Why should we not teach the young man, as far as it comes within our province, to steer clear of the prostitute? Why should we not be the ones to point out to young men the dangers of promiscuous sexual intercourse?

We should not say it is the parents' place to teach the child. We know it is, but many of the parents do not realize the danger of this terrible disease. Many a father, altho he has had it himself, makes light of it and takes it for granted that his sons wil hav it but "get over it" the same as they would from an "ordinary cold." At the same time this father's wife, the mother of his children, may be dragging out a miserable existence because of the very disease that

he, thru ignorance, has carried to her and about which he is making light.

We should not say it is the place of the clergy to teach these things to the young man because, as a rule, the clergy ar not bold enuf to come out and talk as they should against this evil. They wil teach the young man that he is liable to "go to hel" if he is "immoral" but they do not tel him that the greatest hel is liable to be the *"great black plague."*

The young people nowadays ar not very much imprest with the "old fashiond hel" but if they ar told that they themselvs must suffer bodily injury and that that injury may be handed to their future wife and children, they wil take an entirely different view of the matter.

We all know that a vast number of innocent wives ar made invalids thru the effects of this terrible disease, given them by their husbands who hav been told they wer "cured" and no future danger existed. How can we fail to tel these facts to the young man who comes to us suffering from this disease? Would it not be a thousand times better to tel the *wel* young man so that he may gard himself against this awful scourge?

From my experience in diagnosing by means of the Bio-Dynamo Chromatic method, I am prepared to say definitly that *many a case of gonorrhea exists without any micro-organisms, cald the specific gonorrheal micro-organisms, being found.*

That the principal cause of gonorrhea is sexual intercourse with one who has the disease, there is no doubt, but I believe this disease is carried in other ways as much as syfilis is. I believe that a person contaminated with the excretions from a mucous membrane diseasd by gonorrheal infection can directly or indirectly infect another person. My belief is based on the fact that some very young children, even girls, giv the gonorrheal reflex when tested by this most delicate system, and it is morally certain that they hav not been contaminated by sexual contact. Time proved that these young people who gave this reflex for gonorrhea without any known cause for having it, did hav gonorrheal infection.

It need not be a specific urethritis nor in fact any infection about the generativ organs, but it may show itself in the joints, in the hart or in some other manner. When this disease affects the urinary tract, the specific organism known as the gonococcus of Neisser is usually found, but the ques-

tion arises, "What causd this gonococcus?" Is it the cause or the effect? Personally I do not know. My findings go to show that gonorrheal infection is the worst of all infections, yet it is hardly ever mentiond in the public press. From the fact that innocent individuals can be infected by it much more easily than they can be with tuberculosis, why should not every case of gonorrhea be segregated just as much as any other infectious disease. If every young man knew that if he had gonorrhea he would hav to be segregated until all known possibility of infection had past, he would not take a chance of becoming infected. No doubt some innocent individuals would be segregated also, but would it not be better in the long run that such wer the case than to hav "90% of all males" infected by this disease?

At the present time there is no method whereby we can tel whether a person is cured of gonorrhea or not except by the Bio-Dynamo Chromatic method. If you do not believe that the B-D-C method can tel this, so much the worse. You wil then hav to say that there is no known method of determining whether gonorrhea is cured or not. Having these facts in mind, how can doctors tel a young man that it is safe for him to get married after he has once had gonorrhea? They must admit that they ar perpetrating a crime, and I might say a felony, to tel a young man it is safe for him to get married after he has had gonorrhea in the sexual organs.

Let me repeat this in other words. The majority of you wil admit that you do not know whether a person is cured of gonorrhea or not. If you say you know, how do you know? *You hav no reliable way of knowing by any of the laboratory methods.* Then, what right hav you to tel a young man to get married? I say that you hav no right, according to your own admission, to tel a young man that he is safe. After much experience, I am very sure that no person can hav any taint of gonorrhea without the Bio-Dynamo-Chromatic method showing it. This is the one hope that I can giv physicians who wish to advize their patients conscientiously on this vital subject.

All users of the B-D-C method of diagnosis find many people suffering with gonorrhea in some form who ar being treated for all sorts of other complaints. It is for that reason that I am imprest with the fact that the *great black plague* is blacker than it has ever been pictured. It is because of the fact that *I know that I know* that the majority of men who hav been infected with gonorrhea hav not been cured and

that they ar capable of infecting their wives that I urge you to impress upon every young man who comes into your offis the harm that may come from this disease. Do not wait until he has become infected before telling him of the danger. Tel him that there is only one way of stamping out this disease and that is to shun the lewd woman as he would shun a Gila Monster.

Take the matter home to yourself. Suppose your dauter, pure, helthy, and adored, marries a young man who has all the appearances of a clean, upright, honest man. Suppose that after a few months of married life you see signs in her of failing helth. Your traind eye tels you that the *great black plague* has taken hold of her. How would *you* feel? And it does not end there. The child can also inherit a weakend constitution, if nothing more, because of this diseasd condition, which makes the horror of the *great black plague* all the blacker.

We physicians ar imprest with the fact that we must treat the eyes of all newborn babes so as to prevent any possible conjunctival infection from gonorrhea, but is the conjunctiva the only mucous membrane or part of the body that can be infected by a vagina contaminated with gonorrhea? Whether it shows in the babe as a gonorrheal infection or not, I believe that the child is liable to be injured in some way by being born from a woman with gonorrhea.

I shal append to this article enuf cases diagnosed by the Bio-Dynamo-Chromatic method as being gonorrheal to emfasize the importance of correctly diagnosing this so-cald "social disease"—the *great black plague*.

Diagnosis

A person suffering from gonorrhea, whether it is from an old or recent infection, whether infected thru the urinary tract or elsewhere, wil not giv a normal MM VR. He wil giv a *D*-MM VR. No other disease that I hav ever found wil giv this *D*-MM VR. Therefore when a patient givs a *D*-MM VR I *know* that he is affected with gonorrhea in some form.

All users of the B-D-C method of diagnosis ar accustomd, or must become accustomd, to disputes arising if they tel a patient that they hav gonorrheal infection, especially if no so-cald causativ micro-organisms can be found. Very often by massaging the prostate or by some other method,

we can convince the most skeptical that the diagnosis of gonorrhea is correct, but whether we can convince them or not does not matter. *Denying a fact does not make it less true.* Perusing the clinical cases following this lecture, wil giv a little idea as to why I take such a decided stand.

Treatment

Fig. 145 shows *the* method for using powerful *radiant light* for treating either acute or cronic gonorrhea when located about the genitals. The object of this treatment is to produce a profound hyperemia and thereby reduce inflammation within.

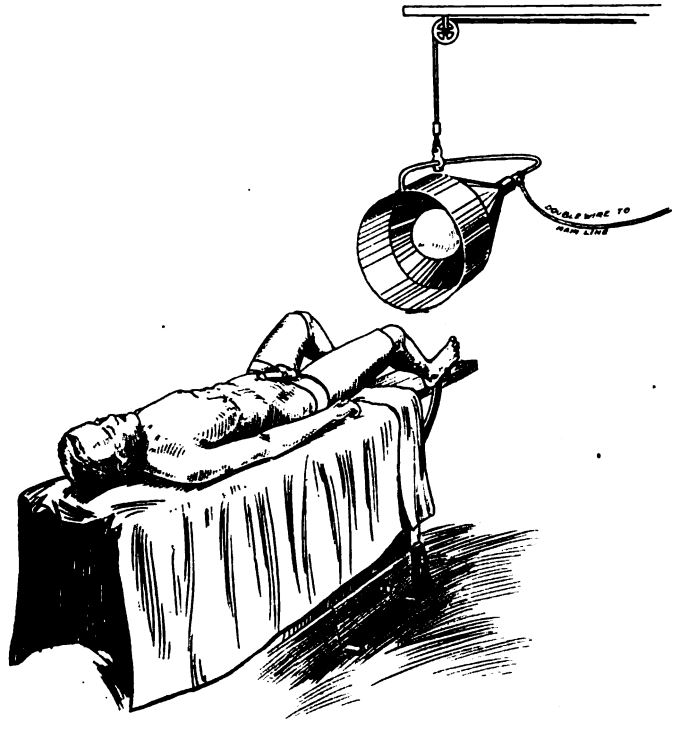


Fig. 145. Showing the latest method of treating specific urethritis, prostatitis, orchitis, epididimitis, etc., by means of powerful radiant energy from a 3,000-candle-power incandescent lamp, or from a Quartz, Mercury-Vapor lamp (Quartz Light). Notis that asbestos paper is on the thighs. Gauze can be put under the asbestos paper to keep it clean. Notis how the testicles ar held up by a bandage, so the light can attack them as wel as the bare perineum.

Experienst users of the quartz, mercury-vapor lamps say that this procedure is greatly enhanst by using the quartz light over the same area along with the radiations from the 3,000-candle-power incandescent lamp. That this treatment with radiant energy from either the 3,000-candle-power lamp alone or in conjunction with the quartz light, is an efficient method of combating gonorrhea cannot be questiond. It is so much superior to any of the high-frequency-current methods that I do not consider them worthy of mentioning.

The using of any glass vacuum electrode thru the penis I consider a criminal procedure. My reasons ar given when discussing glass vacuum electrodes. Experience and reports from hundreds of physicians hav taut me that acute gonorrhea in the male should be treated without passing any instrument into the urethra, unless it is the quartz light applicator. The reason is that the majority of all cases of post urethral prostatic gonorrheal infection ar causd by manipulating the mucous membrane in the anterior part of the penis. The quartz light kils all micro-organisms instantly.

I hav yet to hear of a case of gonorrhea in the male where gleet or strictures followd the powerful radiant light method of treatment. I must emphasize the word, *powerful*, because the small lamps hav very little effect upon this condition.

After the acute stage of gonorrhea has past, I find it is of great benefit to the male patient to treat him thru the rectum by means of the pulsoidal current thru my bi-polar rectal electrode. This aids wonderfully in dislodging any adventitious matter that may hav found its way into the prostate, following the acute stage. It also aids greatly in reducing any hypertrofy that may hav taken place during the acute stage, which had not been entirely relievd by means of the radiant light energy over the perineum.

For *cronic* gonorrhea use the radiant light energy the same as for the acute condition, but every other day use the pulsoidal or the slow-sine current thru the rectum, using either my bi-polar rectal electrode or some prostatic electrode (see lecture on electricity). Experience seems to show that the bi-polar rectal electrode is superior to any other kind for using either the pulsoidal current or the slow-sine current thru the rectum for this condition.

It wil be notist by Fig. 145 that the thighs ar protected with asbestos paper. This is done so that a greater amount

of radiant energy can be centerd upon the perineum and under surface of the penis and scrotum. Notis also from this Fig. that the testicles ar held up by means of a narrow roller bandage past over the thighs. This is done so as to allow the radiant energy to reach the posterior urethra and testicles. It also allows the radiant energy to fall directly upon the perineum.

Do not use any injections for treating acute gonorrhea.

The terrible state of affairs that we find among men who hav had gonorrhea, no matter how many years previous to examination, seems to hav been causd mostly because of urethral injections. If any injections ar used at all, because of inability to use radiant light energy, I would recommend only non-irritating, colloidal silver preparations. There ar some other non-irritating, powerful, antiseptic preparations made, but owing to the uncertainty of obtaining the correct chemical or drug, I hav come to the conclusion that the colloidal silver preparations ar safest. Nearly every one of the other chemicals used for this purpose hav an irritating effect upon the mucous membrane, and that is the beginning of strictures and along with the strictures crowding backward of the infection until it reaches the posterior urethra and the prostate.

When once the gonorrheal infection has reacht the prostate, there is no telling when it wil ever be eradicated. So far my experience and that of my pupils has been very gratifying in clearing up old cronic cases of prostatic gonorrhea. Cases in which the primary infection occurd fifty years previous to treatment hav apparently been cured after a few months of persistent treatment along the lines set forth.

By means of the Bio-Dynamo-Chromatic test one can be *sure* whether the case is cured or not, because, until the gonorrheal toxemia is entirely out of the system the *D*-MM VR can be elicited. When, however, the gonorrheal toxemia is entirely eradicated from the system, the *D*-MM VR cannot be elicited.

The clinical reports following this lecture very wel illustrate this.

Altho I formerly recommended the use of cataforesis and nascent iodin, as wel as some other remedies thru the urethra, I hav had to abandon that procedure for the reason that while some would be successful with it and carry it out correctly, the majority of practicians injured the urethra.

On the other hand, it is very difficult for anyone to handle a case of acute gonorrhea by any mesure whereby the urethral mucous membrane is toucht without aggravating the inflammatory condition. Besides these reasons, I found many urethras that wer smaller than normal and because the physician did not hav any other applicator he tried to force in one that was too large and made the condition stil worse. Consequently I hav come to the conclusion (after being in communication with many fysical therapeutists treating this condition, and from my own experience) that the radiant light energy augmented by use of the quartz light if possible, is *the* treatment par excellence for acute or cronic gonorrhea.

Never neglect to treat the prostate after the acute condition has cleard up.

Stimulation of the 12th thoracic and the 2d lumbar verterbrae is also an excellent auxiliary procedure. This stimulation can be accomplisht by means of the powerful incandescent light as wel as by electric currents or concussion. Those who hav been experimenting upon this long enuf to giv reliable reports tel me that they think the radiant light energy from the powerful incandescent lamp directed over the lumbar and sacral region produces better results than the *manipulation* of any particular vertebrae. Personally I think they ar correct.

Strictures that hav occurd by mismanagement can probably be best eradicated by means of negativ galvanism, using the dilating olivs illustrated in lecture on Electricity. Cutting away strictures, as a rule, ends disastrously. I know there ar cases that *apparently* cannot be relievd by any other mesure, but if one wil take a little time, they wil find that the strictures can be opend up so the patient is better off than they would hav been had they been cut. After a stricture is cut, a raw surface is left to cause a new stricture.

I hav examind patients who hav been treated by the very best urologists in this country, and the strictures wer so bad that they could hardly pass their urin. These strictures had grown worse and worse following the cutting procedures. It is very easy to cut a stricture, but it is not so easy to keep it open.

Constitutional treatment should always be employd in treating gonorrhea. This should include total abstinence from all tea, coffee, chocolate, alcoholic liquors, tobacco, stimulating condiments such as pepper, chili, etc. Shel fish,

such as oysters, crabs, lobsters, etc. should be prohibited.

The best fysical mesures that I know of ar the administration of oxygen-vapor and the B-D-C therapy, as wel as powerful radiant light.

The *internal treatment* should consist of copious drafts of distild or spring water, taken in the morning and erly afternoon but none within three hours of retiring.

The indicated homeopathic remedy is to be considerd as wel as remedies particularly suited for relieving irritation in the urinary tract.

Use Iodin therapy in all cases of gonorrhea. (See chapter on Iodin Therapy.)

Specific Vaginitis

The treatment for acute or cronic gonorrhea in the female, when located in the pelvic region, should include first of all powerful radiant light energy and if possible the quartz light. These radiations should be directed over the pelvic organs, and if the external genitals ar affected, treat the perineum the same as in the male. For the vulva and genital tract, the quartz light has no equal.

Positiv galvanism thru the copper vaginal electrode, described in lecture on Electricity with the negativ pole a clay pad on the abdomen, is in some cases an excellent procedure.

Yeast and hydrogen peroxid is another method of treating specific vaginitis. The tecnic is as follows:

Place about half a comprest yeast cake wel up in the cul-de-sac while the speculum is in situ. Fil a one-ounce syringe, that has a long rubber or glass outlet, with hydrogen peroxid. Place that into the vagina and pack around it a tight cotton tampon. Withdraw the speculum, approximate the lips of the labia, and inject the hydrogen peroxid into the cul-de-sac. The chemical action that takes place is very activ, and one must be prepared for quite an accumulation of gas. (If you hav never used yeast with hydrogen peroxid and do not know its effect, mix the two together in a dish. This wil giv you an idea of what takes place in the vagina when the two substances meet.)

Do not attempt to douche out the yeast or hydrogen peroxid but leave it in the vagina. This treatment should be given once a day.

Vaginal douching, using a vaginal syringe such as shown in Fig. 400, and a suitable, germicidal, non-irritating liquid, should never be forgotten.

The *constiutional treatment* of gonorrhea in the female should be the same as that in the male.

Specific Urethritis Concomitant with Other Toxemias

We often hav cases to diagnose where specific urethritis is concomitant with tuberculosis or syfilis. It requires a little more judgment to diagnose such a case than if it is specific urethritis alone, as the *D*-MM VR wil not be so pronounst if there is also an *A*, *B*, or *C*-MM VR.

The *D*-MM VR wil be notisable just the same perhaps showing the reflex line only one finger's bredth below the working line; and the same wil be true of the *A*, *B*, or *C*-MM VR—the reflex line being only about a finger's bredth below the working line.

Ordinarily specific urethritis givs a very pronounst *D*-MM VR, provided it is not concomitant with some other toxemia.

In the Crescent Series, Chromatic Screens, many screens ar shown to neutralize the abnormal energy coming from many infections concomitant with gonorrea.

CLINICAL CASES—SPECIFIC URETHRITIS—GONORREA

Case 52

A physician 66 years of age presented himself for diagnosis. He gave no symptoms but wanted to know if he had a normal MM VR. Upon examination I found he did not hav a normal MM VR, and altho I tried very many screens to elicit the MM VR, none would do it except the *D*. I diagnosed the case as gonorrheal infection.

The doctor then told me that 46 years ago he had been infected with gonorrhea and altho he had consulted with physicians from far and near and had used all the "regular methods" known, none of them had cured his prostatic trouble.

I mention this case to show how the reaction is reliable even in a case of such long standing.

Case 53

Dr. R. E. Wright of Loveland, Colo., has sent me a complete report of a diagnosis by means of the Bio-Dynamo-Chromatic method which shows the exactness of the test. A young man, hearing that Dr. Wright was using this method of diagnosis, went to him to see if he wer "alright in every way." Dr. Wright tested him and found that he gave a *D*-MM VR. He told the young man what this signified and the young man told him that he had no symptoms of anything of the kind, but two days previous he was at Denver and fel in with "company" that he wisht he had not been with, and it had worried him. Six days after this the young man came to Dr. Wright's offis with a very pronounst case of acute gonorrhea which did not need any special method of diagnosis as the symptoms wer "classical."

From my experience with such cases, had Dr. Wright commenst treating by means of the powerful radiant light, oxygen vapor and B-D-C Therapy at once, the "classical" symptoms would never hav appeard.

Case 54

A man was sent to me for diagnosis. His only symptoms wer melancolia and "chils up and down the back." This man gave a *D*-MM VR and no other screen would elicit the MM VR. I diagnosed the case as gonorrheal infection. I had his prostate "milkt" and very many gonococci wer found in the secretions.

This man gave a history of having contracted specific urethritis eighteen years previous, and emfatically said he had not been exposed to the contagion since and *knew* that he had never had any but the "original attack."

Case 55

A girl 12 years of age was brot to me for diagnosis. The symptoms given wer leukorrhea with an uncomfortable burning sensation thru the pelvic region at times. In every other way the girl was normal and wel developt, and menstrual periods had begun about six months before I saw her.

This girl did not giv a normal MM VR, and altho I tried various screens none would elicit the MM VR except the *D*. I was obliged to disagnose the case as gonorrheal infection. When I inquired into the case I found from the mother and her physician that this child had been raped about five years before and had had more or less leukorrhea ever since.

Case 56

A young man about 28 years of age was brot to me for diagnosis. His physician was treating him for "incipient tuberculosis." He did not giv a normal MM VR, and no other screen would elicit the MM VR except the *D*. I diagnosed the case as gonorrheal infection. His physician could not believe the diagnosis was correct, so I askt him to make "milkings" from the prostate and examin them under the microscope. He did so and found every evidence of cronic, specific urethritis, which was then located in the prostate. The prostate was enlarged and many shreds came out with the secretions.

Inquiry as to his wife's condition showd she had been troubled with what her husband cald "the whites" and "burning sensations thru the pelvic regions" for the past eighteen months.

This patient gave a history of gonorrheal infection eight years previous. He had been married two years.

Case 57

A young man 32 years of age, who was being treated for neurasthenia, was brot to me for diagnosis. He gave a *D*-MM VR. He gave a history of having contracted specific urethritis twelv years before. He had been married about three years and his wife for over two years had been treated for "burning sensation thru the pelvic region" and hypersensitivness over the ovaries. The specific organisms wer found in "milkings" from the prostate of the man and from the vaginal discharge of his wife.

This case is very interesting, as treatment by means of a 2,000-candle-power lamp, oxygen-vapor and B-D-C therapy was immediately instituted. Within six weeks this young man gave a normal MM VR and his general condition was so much improved that he said he "felt like a new man." His wife was also very much improved under the same treatment.

The treatment given was radiations from a 2,000-candle-power lamp for 20 to 40 minutes daily over the perineum of the man and over the lower abdomen of the woman. Stimulation of the 12th thoracic vertebra was used for the man and over the 12th thoracic and 2d lumbar for the woman. Oxygen-vapor inhalation and B-D-C therapy wer used for about half an hour daily in each case.

Case 58

One of my pupils has reported a case of acute gonorrhea in a young man about 23 years of age. He gave a *D*-MM VR and said he thot he had been infected about ten days before. Radiations from a 2,000-candle-power lamp wer immediately instituted along with stimulation of the 12th thoracic vertebra, oxygen-vapor inhalation and B-D-C therapy.

This case was discharged as cured six weeks after the first treatment. Treatments wer given daily. There wer no strictures, cordee, or any other of the common symptoms that go with specific urethritis. No internal medication was given except saline laxativs. A rigid diet was enforst.

Case 59

Married lady 30 yrs. old. Treated six years for tuberculosis. All symptoms, even the cof, indicated tuberculosis. She did not improve but continued to grow worse. She had been to "the best T. B. specialists in the U. S." and all agreed

that tuberculosis in some hidden form was her trouble. All known methods for curing tuberculosis wer used.

She was sent to me for diagnosis and by means of the Bio-Dynamo-Chromatic method I diagnosed her as having gonorrheal infection. She was treated for that, following out my Bio-Dynamo-Chromatic system and using radiant light. She fully recoverd and is now to all appearances a wel woman.

Treating her symptoms would not hav cured her, but nature cured her when given a chance.

Case 60

Clergyman 60 years of age came to me complaining of "lumbago." Upon examination he gave a *D*-MM VR. I told him what this reflex ment and he said, "Wel, I hav certainly had my hel for the first and only offense of this kind." He said that 40 years previous he had contracted gonorrhea and had been cured he supposed. He had always been troubled more or less with frequent desire to urinate and reumatic pains first in one joint and then in another. Later he was tormented with "dyspepsia."

He married when he was 30 years old, ten years after the infection.

Upon examination of the prostate I found it enlarged and sensitiv. Many shreds wer found in the urin past soon after massaging the prostate.

Treatment as outlined abov, carried on for several months, so improved this man's helth that he said he felt "like a new man."

Case 61

Wife of the patient referd to in Case 60 was sent to me for examination and treatment. She complaind of having for years had a dragging, burning sensation thru her pelvic organs.

Upon examination she gave a *D*-MM VR. I did not tel her the meaning of this but treated her with radiations from the powerful, incandescent lamp, positiv galvanism thru the vagina, oxygen-vapor, and B-D-C therapy. Within two months she said that she had not felt so wel before in twenty-five years.

Case 62

Lady 38 years old. Wife of a physician. Sent to me for diagnosis because she had "lumps in the brest." This

lady gave a pronounst *D*-MM VR. Upon inquiry I found that she had complaind for several years of a dragging, burning pain thru the abdomen. She said she had been married fifteen months when she began to hav the pain in the pelvis. She said altho she wanted children she had never been blest with any.

I did not tel her what the *D*-MM VR indicated, but began treating her with radiations from the powerful incandescent lamp, positiv galvanism thru the vagina, and indicated internal medication. Within two months the lumps in the brest had entirely disappeard and she said she had not felt so wel before since she was married.

Case 63

Physician, husband of the lady mentiond in Case 62 came to me for diagnosis. He gave a *D*-MM VR. He admitted that a few years previous to his marriage he had contracted gonorrhea "in the regular way." He supposed that he was entirely cured before he was married or he would never hav married.

Examination of his prostate reveald a hypertrofy, and many shreds wer found in the urin past immediately after prostatic massage.

He said he had been botherd for years with an irritability about the neck of the bladder and had taken all sorts of "old scool" remedies for it. He said he thot the trouble came from riding a bicycle and never dreamd of its being from his old gonorrheal infection.

Treatment by means of the bi-polar rectal electrode, using the pulsoidal current; powerful radiant light; and other appropriate mesures relievd most of the bladder irritation. He later said, "I am much improved by this treatment but think of what my poor wife has sufferd and think of our childless home."

Case 64

Married lady 35 years old. Had been treated for tuberculosis for about three years but did not improve. Her new physician brot her to me for diagnosis. She gave a *D*-MM VR.

Treatment was at once begun, following out the methods above cited. Improvement was very markt within one

month. She was later operated on for adhesions, at which time the operating surgeon said that the adhesions wer doubtless causd by gonorrheal infection.

Case 65

Married man 58 years old. Thirty-six years ago he was suddenly taken with acute inflammation in the right eye which within 24 hours had reacht the left eye, and within 48 hours the sight of both eyes was destroyd. He reports that the physicians who took care of him at that time cald his condition "acute ofthalmia." They told him that if he had gonorrhea they would say it was gonorrheal infection of the eyes.

He said that about two weeks previous to this purulent ofthalmia he had had sexual intercouse with a young woman whom he thot was "all right." He said it was the first time he had ever had sexual intercourse and as he was a green country man he did not dream of there being any danger of contagion if he went with a woman who had a "helth certificate." He says he never had any urethral discharge and when he was examind for gonorrhea to see if that could be the cause of the ofthalmia he gave no symptoms of gonorrhea.

The way he accounts for this ofthalmia is that owing to an elongated foreskin he often had irritation back of the glans penis and used his handkerchief for wiping off any secretion that might gather back of the glans. The day he thinks he infected himself was very warm and he was swety and thotlessly used his handkerchief to wipe the swet from his' forehed. It was a very short time after this that the purulent ofthalmia began. He said he always bathed himself very thoroly every day and knows that as far as any external contamination went it was out of the question.

Some years ago I examind this man and he gave a pronounst *D*-MM VR and I then told him that his infection was of gonorrheal origin. He said he could not believe it, and he felt sure that it was not syfilis as he had many blood tests made,—all being negativ.

He married ten years after he was stricken with blindness but before marriage he was thoroly examind and said to be in a helthy condition. His wife aborted from some unknown cause when she was eight months pregnant. The next time she was pregnant she aborted at about three months. Since that time she never became pregnant. The

menopause came on much earlier with her than with anyone else in her family and she took on flesh very rapidly. Otherwise there seems to be nothing abnormal about the wife.

A few months ago this man came to me again for examination. He stil gave a *D*-MM VR. Upon examination of the prostate I found it was enlarged and from milkings I could get a good deal of secretion which was laden with shreds. This man gave no other VR except that elicited by the *D*-Chromatic Screen. Therefore I diagnosed his trouble as gonorrheal and treated him daily in the following manner: Pulsoidal current thru the bi-polar rectal electrode; powerful, radiant light over perineum and sacrum every other day; every alternate day pulsoidal current thru the eyes and 2d and 3d cervical vertebrae, followd with the magnetic-wave current. Every day he had oxygen-vapor inhalation and B-D-C therapy. Internal treatment was iodin therapy.

Four weeks after beginning this treatment I examind him according to the B-D-C method and he gave a normal MM VR. His blood pressure, which was over 200, dropt to 140. He told me he had not felt so wel before in 36 years.

This no doubt is a case of *maskt gonorrhea*, the principal infection being in the posterior urethra. A little of the secretion doubtless came out under the elongated foreskin and the handkerchief was contaminated when wiping off the glans. Some of this material unquestionably reacht the conjunctiva and set up the purulent ofthalmia. As to whether he infected his wife, I do not know. I think he did.

The high blood pressure is evidently causd by some change going on in the circulatory system. Because he has at times an intermittent hart with aortic insufficiency, I concluded that he had had at some time an endocarditis, which I often find in persons who hav had gonorrhea. All this man's tendon reflexes ar normal.

Cases of this kind ar often cald syfilitic, but I mention it here in detail to illustrate my theory that *gonorrheal infection* causes a large number of so-cald "syfilitic sequellæ."

If this man had never had ofthalmia, he probably never would hav thot he had gonorrhea.

This is by no means an isolated case as time and time again I examin patients who can date their il helth "about two weeks after" some sexual escapade, altho they had no symptoms of urethritis.

Case 66

Mrs. D. 48 years of age was referd to me for diagnosis and treatment by her seventh physician within one year. Her case had been diagnosed as incipient tuberculosis and then as tuberculosis of the bladder. As she continued to grow worse under treatment, she continued to change doctors or the doctors sent her to someone else.

Before asking her any questions, I examind her by the B-D-C method. She gave a pronounst *D*-MM VR, so I diagnosed the condition as being gonorrheal in origin.

Upon obtaining her history I found that her husband had had gonorrhea, but she supposed he had been cured of it. She gave a history of having to urinate every one or two hours during the day and night, and of having severe pains thru the bladder and vagina with a continual burning feeling thru the vagina, urethra and external genitals.

Upon examining the urin I found the quantity very scanty and loaded with pus and red blood corpuscles as wel as bladder epithelia of the various layers, showing there was a very intense inflammatory condition present. Gonococci wer very numerous in the secretions from the urethra.

This lady had been using very strong lysol solutions as wel as bichlorid of mercury solutions in the vagina, which had brot about severe inflammation in those parts. I told her to use no more washes except what I gave her.

I gave her Abbott's hexamethyl compound, one tablet in half a pint of water, to be repeated three times daily for several days.

I began treatment by means of the 3,000-candle-power lamp over her abdomen and genitals, this lamp being placed so the heat was as much as she could stand. I gave this for 40 minutes at a séance. This was followd by oxygen-vapor inhalation and B-D-C therapy for forty minutes. These treatments, along with stimulation of 5th lumbar and 12th thoracic, wer given daily for six weeks.

After the first week of treatment she could sleep all night without arising once to urinate. All pain thru her pelvic region, including the bladder, had disappeard. The inflammation in the genitals had subsided. At the end of four weeks she was practically wel. After six weeks of treatment I considerd her wel and she said she was wel.

Quartz Light was also indicated in this case and I hav receivd very good reports from its use in similar conditions.

Case 67

The following case was reported by Oran A. Brown, M.D., of Chicago.

Married man 28 years old. History of having been treated for several months for reumatism and valvular hart lesions without notisable improvement.

By means of your B-D-C method of diagnosis, he gave a very pronounst *D*-MM VR. When told what this screen indicated, this patient said "I thot that was a closed incident in my life." He admitted having had gonorrhea one year previous. Examination of the prostate reveald the location of the trouble.

With B-D-C therapy, prostatic massage, powerful incandescent lamp, and spinal stimulation, this case was soon free from all reumatic pains; and the hart symptoms, which proved to be functional, cleard up. He said that if I had not mentiond the fact of gonorrhea he never would, as he did not dream that could be the cause of his trouble.

Case 68

The following case was reported by P. C. Jensen, M.D., Manistee, Mich:

Man aged 54. Had complaind of pain in the back for years and was troubled with frequent urination and hemorrhage from the bladder. He had tried many of the medical and drugless methods of treatment without success. Upon examination by your B-D-C method, he gave a *D*-MM VR. I gave him the following treatment: Radiations from a 2,000-candle-power lamp; B-D-C therapy; interior urethral injections of methylene blue alternating with a weak solution of potassium permanganate; and internal medication as seemd indicated.

This patient has to all appearances made a complete recovery and now givs a normal MM VR.

This case especially illustrates the reliability of the B-D-C method of diagnosis and treatment.

Case 69

Following is a report from Otto Sporleder, M.D., Reedsburg, Wis.:

Since taking your course in B-D-C diagnosis two months ago I hav been very successful with it. Within the last two weeks I hav made six diagnoses at the hospital here, three

of them giving the *D*-MM VR. Out of the latter three, two hav been diagnosed by good men as having appendicitis. An operation for appendicitis proved that my B-D-C diagnosis was correct and that the others wer wrong.

JAUNDIS

E-MM VR

Jaundis as wel as any derangement of the hepatic system, provided that it is not causd by some malignant or infectious condition, can be diagnosed by the *E*-Chromatic Screen.

The *E*-MM VR (or green-MM VR) indicates that the *primary* cause of the intoxication is in the hepatic system.

Patients having an *E*-MM VR I giv sodoxylin (Abbott) as wel as salithia (Abbott), or some other reliable eliminants, and "intestinal antiseptics."

I also use powerful radiant-light radiations over the region of the liver and especially over the gall bladder, at least 20 minutes daily and about the same length of time over the thoracic region of the spinal colum. The Quartz Light over the hepatic region also is a great aid.

I also employ oxygen-vapor and B-D-C therapy.

The diet of course must be regulated.

Podofylin I always giv to all persons exhibiting an E-MM VR—one-sixth grain after each meal is the usual dose.

CLINICAL CASE, *E*-MM VR

Case 70

Single lady about 25 yrs. old had been ailing for over two years. She had been treated for tuberculosis and malaria and syfilis. She was sent to me for diagnosis. She gave a pronounst *E*-MM VR, so I diagnosed her trouble as of hepatic origin.

I gave her, to begin with, six one-sixth grain podofylin pils one-half hour apart after supper and the next morning prescribed a saline laxativ. For one month I gav her radiations from a 3,000-candle-power lamp over the liver region 20 minutes and same over the thoracic region of back. This

light treatment was followd by oxygen-vapor therapy for 40 minutes. These treatments wer given daily. At the end of the month she said she felt wel, was wel, and she has remaind wel for over two years.

MALARIA

F-MM VR

Malaria, or *Malarial Infection,* as it is sometimes cald, wil giv a *C*-MM VR, but can be differentiated from auto-intoxication or syfilis by means of the *F*-Chromatic Screen. A person giving an *F*-MM VR has *malaria* in their system, no matter what other intoxication they may hav.

I used to think that the energy taken from the spleen would diagnose malaria, but I hav found that it is not reliable, as many other conditions influence the "organ test." Tobacco or alcohol wil influence it, so now I rely on the *F*-MM VR and it has not deceivd me yet. Pupils from far and near report the reliability of this Chromatic Screen.

This reaction can often be cleard up within a fortnight by giving either quinin or arsenic, depending upon which remedy seems to be indicated. It can also be cleard up by many other remedies, taking into consideration the *patient* rather than the disease. Elimination by means of the bowels kidneys, and skin is to be pusht to the very limit.

I hav found powerful electric light, as wel as electric light baths, to be very efficient in clearing up malaria.

The quartz light is also very beneficial.

As metabolism is very much disturbd during an attack of malaria, oxygen-vapor inhalation along with B-D-C therapy is indicated. These modalities greatly enhance nutrition.

Some of my pupils hav reported having cured malaria by means of B-D-C therapy and oxygen-vapor inhalations alone—using no other modality.

Of course all of us know that the action of the bowels must be made free, and dietetic as wel as hygienic mesures must be carried out, no matter what modality is employd.

The following malarial cases ar so typical and show my method of diagnosis so wel, that I cite them here:

Case 71

Single lady 28 years old. Complaind of pains in the back beginning several years ago. Was sent to me for diag-

nosis. She gave a *C*-MM VR. To be sure that it was not syfilis, I put her on an eliminating diet and treatment for a week and then examind her again. Stil she gave a *C*-MM VR. Now I did what I should hav done at first—used other screens than the first one which gave an MM VR. I used several other screens and none except the *F*-Chromatic Screen would elicit an MM VR, but it did very wel indeed. Therefore I diagnosed the case as *malaria*. She then told me that she had livd in a malarial district, but did not know she had malaria. Appropriate anti-malarial treatment soon cleard the case up, thus proving the diagnosis was correct.

The following case record was recently sent me by Oran A. Brown, M.D., of Chicago.

Case 72

Married man 36 years old had been treating under my direction for some time for a general "run-down-condition." My diagnosis was "neurasthenia." He did not respond quickly to treatment, so as soon as I lernd your B-D-C system of diagnosis I tried that and obtaind a *C*-MM VR. Not satisfied that the patient had syfilis, I tried the other screens and when I reacht the *F* I got a beautiful MM VR. I immediately began treating him with intermittent light thru the *F*-Screen, gave him anti-malarial medication and spinal stimulation where indicated, and he soon recoverd. Later this man told me that years ago he had "chils and fever," but thot he was cured of that long ago.

INFLUENZA—THE GRIP

G-MM VR

A person afflicted with *la grippe* wil give a *G*-MM VR. If there be no concomitant intoxication the reflex wil be very markt.

For treating this infection, I hav found that salithia and sodoxylin ar really all the internal medicaments that ar usually required. Let the patient drink all the water he can. Giv electric light baths if possible. Oxygen-vapor inhalation and the B-D-C therapy ar valuable adjuncts.

Keep the patient quiet. This is very important. Probably he is better off in bed until the acute symptoms ar past.

For localized pains use radiations from the powerful incandescent lamp, and if possible use the quartz light also.

The hedake that usually goes with influenza is best treated with the big lamp, quartz light, and oxygen-vapor.

If the patient does not recover quickly, watch out for *tuberculosis*.

I find so many tuberculous patients who date their "downfall" from the time they had "grip" that I think we should caution our patients to not think too lightly of influenza, but take care to get wel rapidly by following directions explicitly.

NEUROTIC CONDITIONS

H-MM VR

It is impossible for me at this time to classify the neurotic conditions that react to the *H*-Chromatic Screen.

Paranoia and other deep-seated neurotic conditions wil giv a pronounst MM VR when light is radiated thru the *H*-Chromatic Screen on the bare chest and abdomen.

There ar other neurotic conditions, which ar not as deep-seated as paranoia, which also react to this screen.

Hysteria might be mentiond as often reacting to the *H*-Chromatic Screen.

Exaggerated cases of excitability wil often react to the *H*-Chromatic Screen.

Users of the B-D-C system wil often hav cases that wil react to the *H*-Chromatic Screen, and if treated according to the B-D-C method with the *H*-Chromatic Screen the condition is wonderfully improved.

EPILEPSY

105-MM VR

While I would not say that all cases of epilepsy wil react to the *No. 105*-Crescent Series Chromatic Screen, yet I can say that so many with epilepsy hav reacted to it that it is a great aid in diagnosing the condition.

Nowadays one hears a good deal about "true epilepsy" or "seudo-epilepsy," "epileptic seizures" and "epileptiform seizures." I am not sure that the *No. 105*-Screen wil differentiate these two conditions, but I do know that it has been a great aid in clearing up these conditions, and I hav several reports of cases of true epilepsy treated by this

screen Bio-Dynamo-Chromatically which hav been greatly helpt.

In speaking of epilepsy under this hed, it might be best to say a little more about it.

Epilepsy is a condition that almost all physicians see. It is the *bête noir* of all practitioners. Of course the first consideration in treating a case of epilepsy is the diet. Predigested food or nothing but the most easily digested food should be given for several months. The diet should be cut down to a minimum—only just enuf given to take care of the bodily requirements.

See that all avenues of elimination ar kept open. Many times one day's constipation wil bring on an epileptic seizure.

The epileptic should breathe only fresh air. He should never be in a room where the air is robd of its purity by tobacco smoke or other fouling agents.

All hygienic mesures should be carried out to the very limit.

See that all the sfincters of the body ar properly lookt after. If contracted, be sure that they ar *sanely* dilated. Sometimes a sfincter ani is the underlying cause of some of the epileptic seizures. The same is true of the orifis of the vagina.

I hav known of some cases of epilepsy, the seizures of which hav been inhibited by pressures on certain parts of the body. This might come under the hed of Zone Therapeutic procedures.

As no two cases of epilepsy seem to be exactly alike, great ingenuity must be used in handling each individual case, and each individual case must be a law unto itself.

One simple procedure I hav found to work very wel in some cases and that is to connect the two sides of the hed by means of a metallic band so arranged that the whole band is insulated except the parts which come in contact with the temporal region on each side. The theory underlying the use of this equalizing band is that the epileptic aura which precedes nearly all epileptic seizures is causd by lack of electric equilibrium of the body. While this theory may not be correct, I am sure of one thing and that is that the seizures in epilepsy ar often lessend by wearing such a contrivance on the hed.

A spring brass band coverd with lether with the exception of the ends is a very good way to arrange this. It is a simple thing to make and all one has to remember is

that the temporal region of both sides of the hed should be electrically connected while the rest of the connector should be insulated. I hav left out illustrations showing this little device because there ar so many different ways of making it and so many different conceptions of its use.

Some physicians hav gone so far as to keep the temporal regions of the hed shavd so a good contact can always be made with this metal. This spring metal band can go over the top of the hed or from the sides of the hed around to the back. Some arrange them inside of a cap.

In concluding this discussion of epilepsy, I might ad that within the past two years I hav had reported two cases of epilepsy practically cured by carrying out hygienic mesures, oxygen-vapor inhalation and B-D-C therapy, radiating the light thru the *No. 105*-Crescent Series Screen.

TONSILITIS

SYMPTOMS

The acute attack resembles influenza so much that it is often diagnosed as influenza.

The *No. 106*-Crescent Series Chromatic Screen wil diagnose tonsilitis, thereby differentiating it from influenza, which is diagnosed by the *G*-Chromatic Screen.

Treatment is the same as for influenza. Keep all emunctories open. Hot packs, electric light baths, radiations from the powerful incandescent lamp, ar all indicated to enhance swetting.

Local treatment of the tonsils from without can be radiations from the powerful incandescent lamp or the *Quartz Light*. For localized treatment thru the mouth, nothing can compare with the *Quartz Light*.

Spinal stimulation over the cervical vertebrae is also indicated, but I find that light and heat over this area seem to be as effectual as manipulation or vibration.

Internal treatment is the homeopathic indicated remedy, as wel as iodin therapy and calcium sulfid. (See Iodin Therapy and Sulfur Therapy.)

Clinical Case: Tonsilitis

Case 73

Lady 28 years old. Taken suddenly with pains in the nees and back and general malaise. Was sent to my offis

for diagnosis. All the symptoms appeard to be those of grip but according to the B-D-C method, it was a case of tonsilitis and I instructed the patient to immediately begin gargling the throat with hydrogen peroxid (a teaspoonful to a tablespoonful of water) take a good cathartic, and calcium sulfid, one grain every hour. I sent this patient home at once and receivd word the next morning that she had a very sore throat. She had what proved to be a typical case of tonsilitis but its severity was much mitigated by profylactic treatment.

Had she been able to come to my offis I would hav used powerful, radiant light and oxygen-vapor inhalation along with B-D-C therapy.

For *hypertrofied tonsils*, which often follow repeated attacks of tonsilitis, *the treatment par excellence is the Quartz Light*. This can be used over the neck and then thru a suitable applicator thru the mouth directly over the enlarged gland. This wil doubtless reduce the enlarged tonsil better than any other single procedure. It is far better than fulguration and is practically painless.

Clinical Cases: Hypertrofied Tonsils

Case 74

Miss C. Age 14. Enlarged and painful tonsils. A surgeon advized enucleation, but mother brot her to see me first. I found face and throat very tender to touch and *tonsils very much enlarged*. Voice impaird. General condition of patient "run down." She was just beginning to menstruate for the first time. I gave high candle-power light over entire body 20 minutes front, and 20 minutes over back, for three treatments on consecutiv days. Then 20 minutes on face and throat and 20 minutes over the entire body for seven treatments on consecutiv days. Then used high frequency currents from a static machine, thru a surface vacuum tube, applied to the region just below the inferior maxilla, a few times, and ended the treatments by giving fulguration to the tonsils. The fulguration treatments wer about five in number. The tonsils contracted to normal size, and the patient has been wel for past eight years, and her general fysical condition "perfect."

For such a case *now* I giv radiations from the powerful incandescent lamp over the entire body as wel as the Quartz Light thru the mouth, localized over the enlarged tonsils.

This treatment is followd by oxygen-vapor and B-D-C therapy.

Note: The clinical case abov given is particularly interesting from the fact that the surgeon, who advized enucleation of this girl's tonsils, performd enucleation of the tonsils on a young man in the same neighborhood. He died from the effects and was buried the same day that I pronounst this young girl as wel.

It is mentiond elsewhere in this book, but I want to mention it again here that *the promiscuous enucleation of tonsils is a crime,* and those who do it, with the main idea of collecting fees, should be banisht.

I can remember when it was the fashion to take out ovaries upon every pretext. Then came the fashion of taking out the appendix from every person who had colic. Then came the fad of taking out the tonsils, and right on the heels of that came the fad of pulling out the teeth. The proposed fad of taking out part of the intestins can hardly be discust in a book. The best way of discussing that is to put the promoters of such a system in State's prison for life.

Some foren scientists hav said that man can liv with a good many of his brains removed. I think from what we read of these various faddists or "Kultur" victims that they ar an example of those who can liv without any brains.

Intensiv training along special lines is good if one starts right, but extremely bad if he starts wrong.

Some "scientists" with perverted brains seem to imagin that Nature does not know her business. They remind me of the drunken "scientist" who was never sober. He wrote a "scientific" paper to prove that the erth moved up and down because it so appeard to his pickled brain.

Every organ in the body is the result of evolution and is needed or it would not be there. Study to find out its worth rather than its worthlessness.

BIO-DYNAMO-CHROMATIC DIAGNOSIS AND CONDENST OUT-OF-DOORS TREATMENT

EXPERIENCE IN HOSPITAL PRACTIS

By Orin W. Joslin, M.D.,D.D.S., Dodgeville, Wis.*

(Medical Director of Dodgeville General Hospital and Pine Grove Sanitorium)

Three years ago I opend a hospital at Dodgeville, Wis., with a capacity of eight beds. I was using drugs, electro-therapy, mecano-therapy, and all of the other therapies now common to modern hospitals, and with the average success common to such methods. Finally I investigated Dr. George Starr White's Bio-Dynamo-Chromatic method of diagnosis and today we ar a $50,000 corporation, enlarged to a capacity of 25 beds and a record of easily 85 to 90 per cent. of cures to our credit, all as a result of having gone deeply into Bio-Dynamo-Chromatics.

As extravagant as it may sound, I can honestly state that, according to contingent developments, the admissions of other physicians and the patients, and the checking up in every way possible, every diagnosis we hav made in the past year by Bio-Dynamo-Chromatics has been correct. We hav taken them as they came, and I think we hav been able to make a Bio-Dynamo-Chromatic diagnosis in about 90 per cent. of the cases.

Our treatment has for the most part consisted of the use of the Chromatic Screen that diagnosed the case, oxygen vapor, 3,000-candle-power light, quartz light, spinal stimulation and the sinusoidal currents.

Regardless of the disease, our results in treatment hav been surprisingly uniform. We now use practically no drugs, and stil we hav cured the very worst cases of so cald incurables. Our latest sensation is the cure of a case of pul-

*Written especially for the seventh edition of Dr. White's Lecture Course to Physicians.

monary and laryngeal tuberculosis that was given up by a state tuberculosis sanatorium. When he came to us he had large cavities in both lungs, he was terribly emaciated and weak and his voice was entirely gone. Today, after eight months of treatment, he is cured. He says he never felt so wel and was never able to work as he now is.

Cancer is responding to the same treatment in the same manner, and we hav a case of gastric cancer now seemingly nearly cured after eight months of treatment. When she came to us, she was also terribly emaciated, was having hemorrages from the lungs every day, pains thruout the lungs and stomac, could not eat nor sleep. She has improved from the first day, her improvement has been stedy until today she is the picture of helth, has had no hemorrages, no pain, and the tumor in the stomac that was plainly palpable even by the patient has disappeard.

This line of diagnosis has cald so many cases of tuberculosis and cancer, along with every other kind of case, that it became necessary to open a sanatorium for the exclusiv treatment of those two diseases; and now we hav a General Hospital very busy, owing easily 80 per cent. of its reputation to Bio-Dynamo-Chromatics, and a Cancer and Tuberculosis Sanatorium that owes 100 per cent. of its reputation to the same system.

I consider it revolutionary to the practis of medicin, and there seems to be no limit to its possibilities.

Formerly I did as every other physician did, namely: In taking a new case I would get a carefully studied history and all the data in every other way that I could that might giv a clue that I might at least giv the disease a name. Then I would get the average small percentage of results and hold about the same percentage of my patients proportionate to the results.

Now as a routine, we invariably *warn* our patients when they first come, *not* to tel us anything more than the name and address, and the fact that they came for diagnosis. We want to first determin what we can by Bio-Dynamo-Chromatics, uninfluenst by any other aid such as history or any suggestion whatever. Of course not all cases can be diagnosed by this method, but practically any toxemia, even many drug toxemias, can be, and if one does not realize the extremely high percentage of diseases that ar or should be clast as those of the toxemias, he wil find in this method of diagnosis the one and only method by which he can detect

toxemias, whereupon he wil then be positivly astounded to see how really few diseases there ar left after those of the toxemias ar filterd out.

Having made the Bio-Dynamo-Chromatic diagnosis, we take the history and anything else we can get bearing upon the case and invariably find the history checks up with the B-D-C findings—and many ar the surprises, both to the patient and to us; but greatest and most plesant ar the surprises, also to both the patient and to us when it comes to the *treatment*.

My assistant, Miss C. M. Johnson, who has helpt me to develop my tecnic in Bio-Dynamo-Chromatics, has become very skilful in the work, and to check up our diagnoses, I frequently hav her first "run thru the screens" and make a note of her findings before I see the case. I then "run thru the screens" myself and after finishing, check up my findings with hers. It is indeed most gratifying to find that we almost invariably obtain the same findings from the same screens.

The following case wil illustrate an interesting incident pertaining to this checking up.

Man from Colorado, aged 55. Had sufferd from asthma for 20 years and it was all he could do to get upstairs. As I was busy when he was brot in for examination, I had my nurse assistant test out his reflexes bv the B-D-C method. Without knowing her findings, I later examind him and got a pronounst *F*-MM VR (malaria). I askt him when he had malaria. He was so astounded that he nearly dropt and said, "Wel, what do you think of that? That is exactly what the nurse askt me." He told us he had malaria in 1905.

He also gave an *H* and a *No. 105*-MM VR. His history showd that he occasionally had epileptic seizures. The nurse obtaind the same reflexes with the same screens all the way thru.

We immediatelv commenst treating this man according to our findings. His asthma has cleard up in a wonderful manner.

In addition to the foregoing, the following cases briefly reported wil suffice to show some of the possibilities of diagnosis by the B-D-C method as wel as the possibilities of treatment following out the CONDENST-OUT-OF-DOORS system as taut by Dr. George Starr White of Los Angeles, California.

Case A

Woman, aged 46. Treated for pulmonary tuberculosis for 12 years, mostly based on the fact that she had frequent hemorrages. B-D-C plainly showd strong cancer reaction. Fysical findings easily reveald large cancer of stomac and involvment of pulmonary region. She immediately responded to cancer treatment and her improvement has had no interruptions.

Case B

Farmer, age 22. Said his doctor told him he had only pleurisy, but as he was coffing and getting no better he wanted to know. B-D-C plainly showd pulmonary tuberculosis. His parents did not believe it and would not allow him to take treatments. Five months hav past, and his parents and all doubting friends now admit he has it.

Case C

Woman married, age 27. Terribly emaciated and came into hospital on two crutches. Said she had been to Rochester and every other good place she could think of but no diagnosis had been made. Energy conducted from the swollen nee joints showd strong gonorreal reflex; subsequent history obtaind with much difficulty proved of its having been acquired and treatment further proved the diagnosis to be correct.

Case D

Man, age 66. Diagnosis gonorreal toxemia. He then admitted that he "had it good and plenty" at 21 and had never been wel since. A course of treatments put him in better condition, according to his statement, than he had been for many years.

Case E

Young man carried upstairs by assistant. Walkt by means of a cane. Every joint in his body was paining him. Said he had been treated for reumatism for 15 years, and was constantly getting worse.

The B-D-C method showd him to hav pulmonary tuberculosis and gonorreal reumatism. Following out the B-D-C line of treatment, in one week's time he was apparently perfectly free from reumatism, and is now under treatment for tuberculosis. He gaind five pounds last week.

Altho he lookt like deth when he came to us, he now appears ruddy, and is surely one of the happiest fellows we ever saw.

Case F

F. G. Man aged 27. Walkt with a cane. Had to be helpt upstairs by an assistant. Enterd hospital two months ago. Nee joints and ankles painful and terribly swollen. Patient greatly emaciated and pale, eyes glassy, suffering agony from his joints.

Patient gave an *A* and a *D*-MM VR. Energy conducted from entire right lung dissipated by *A*-Chromatic Screen.

Put him under our regulation *condenst out-of-doors* treatment and in 24 hours he gave his cane to the nurse, saying that he thot he would not need it any more. After two days' treatments he said he felt so wel that he wanted to go home to show his people how quickly he had improved. On reaching home he fel on the ice and was brot back the next day suffering terribly as every joint and muscle seemd to be painful.

In five days from that time he was seemingly cured of everything except his tuberculosis. He has continued treatment, but is the picture of helth—says he never felt so wel in his life and has gained 16 pounds.

He said that for several years he had been treated by his home doctors for reumatism but had grown progressivly worse.

At the present time we consider that he is nearly cured of his tuberculosis and expect to discharge him as cured inside of another month.

Case G

A middle-aged lady. Wife of a clergyman. Had been having "bad spels with her hed and nervs." They had resisted all forms of treatment from many specialists far and near, and her family thot she was going insane. She was brot to us for diagnosis and treatment. She gave a pronounst *D* and also a *No. 105*-MM VR. Owing to her social sfere, no one dreamd of asking her or her husband if she could hav any gonorreal infection.

We began treating her according to the diagnosis, and she responded immediately, and after two weeks says that she has no trouble whatsoever in doing her work.

Case H

C. P. Farmer, aged 19. Recurrent furunculosis. This time it involvd the nee joint in a large abscess. His general appearance was good and he lookt perfectly helthy, but much to our surprise he gave a pronounst *A*-MM VR. Energy taken from the nee joints and the lungs was dissipated by the *A*-Screen. Diagnosis therefore was tuberculosis of the lungs and nee. Used *"Dionol"* dressings over nee joint 48 hours, lanst and draind, and in three or four days it had practically heald.

Patient is now under Dr. White's *condenst out-of-doors* treatment for the pulmonary condition and is improving rapidly.

Case I

Mrs. C. O. Aged 45. Complaind of throat trouble. Said she became hoarse and lost her voice at times. She said physicians had told her it was "the nervs" and had been treating the nervs of the throat.

She gave a pronounst *A*-MM VR and energy conducted from both larynx and throat was dissipated by the *A*-Screen. Laryngoscopic examination showd epiglottis studded with tubercular nodules.

She did not take treatments as she came from Iowa and said she wanted her family doctor to take care of her.

Case J

Mrs. A. T. L. Aged 33. This case I reported some two or three months ago as being what was supposed to be an incurable case of tuberculosis. I take leave to now giv a report of her condition.

She was having hemorrages from the lungs every week or two, menstruated every two weeks, very bad cof and expectoration, very weak and emaciated. Came here in what was considerd a hopeless condition—as she said, "came here to die." When she came here she weighd 104 pounds.

She began to improve and gain in weight from the first day. When she saw she was improving she told us she had never weighd more than 113 pounds and if we could make her weigh 115 pounds she would be very happy. She now weighs 130 pounds and is stil gaining. Her cof and expectoration hav cleard up. She is not only nearly cured, but has developt both bodily and mentally and in a manner that

no one could ever hav anticipated. A few days ago her next-door neighbor past her on the street and did not know her.

Case K

Mrs. M. K. Aged 38. Gave an *A*-MM VR. Energy conducted from entire lung area dissipated by the *A*-Screen.

She gave a history of having had bronchitis and pleurisy. A large area over lower left lung was very sore. This area she cald her "pleurisy spot." She said she had not been able to lie on that side for a long time. The night following her first *condenst out-of-doors* treatment, she slept on that side, as she said, without the slightest discomfort. She has stedily improved from the first day and is making rapid recovery.

Case L

Mrs. B. K. L. Aged 23. So weak and emaciated she had to be carried upstairs. Said she had not slept any to speak of for months. She was panting for breth, puls was shallow and running at the rate of 125. Temperature 103.6 F. in the evening, glands swollen and hard all over body. Mediastinal glands involvd so as to force the hart to the extreme *right* side occupying a position behind the right nipple.

Her husband told us that the hart used to be normal but that the change of position had progrest stedily.

She was not able to stand long enuf for a diagnosis so the energy was conducted from one of the glands to another person, and the energy so conducted was dissipated by the *A*-Screen.

Diagnosis—Tuberculosis complicated by Hodgkin's disease. We started treatment at once with combined powerful radiant light energy—incandescent and quartz—using it to toleration. We also gave 30-minute treatments with auto-condensation.*

Patient has shown improvement from the very first. Sleeps very wel. Does not suffer any pain and after a few days' treatment says she does not feel as tho anything wer the matter with her. She walks up and down stairs with perfect ease. As yet there is no perceptible change in the glands.

*Dr. White uses Magnetic-Wave Current in lieu of auto-condensation.

I regret that I cannot at this time giv a more satisfactory report of the case as it is intensely interesting, but from the improvement that has alredy taken place and since no treatment previous to this has ever made any change for the better, we hav reason to believe that we can effect a cure.

(Dr. White has reported to us a case similar to this where after two weeks' treatment the patient considerd himself cured. In his case the blood count was about normal after four weeks and all enlarged glands had disappeard.)

Inasmuch as Hodgkins' disease is considerd to be practically fatal, and inasmuch as we started with this case at what appeard to be "the very last stage," our astonishment is inexpressible.

In justis to Dr. White, I wish to state that in this case we ar using the *condenst out-of-doors* tecnic as outlined by him.

Case M

Mrs. B. S. B. Aged 34. Gave a history of recurring gastric ulcers for the past 15 years. Our diagnosis was ulcers of the stomac and duodenum. Two months ago she was wasted away to almost a shadow.

We gave her the regulation diet for such cases and along with it the *condenst out-of-doors* treatment—powerful incandescent light, quartz light, oxygen-vapor inhalation, and B-D-C therapy. To this we added auto-condensation.

The improvement has been stedy and rapid. The gastric pains soon disappeard and hav not returnd. She is now able to take quite a liberal diet and is rapidly bilding up. This treatment is doing better work for this case than any treatment that I hav ever seen for similar cases. It is the first case of the kind that I hav treated by Dr. White's *"condenst out-of-doors"* method.

Case N

Some time ago we reported Mrs. G. H. Aged 46. Had been treated for tuberculosis for the past 10 years and had been treated in the State Tuberculosis Sanitarium for such, because she had a cof and frequent hemorrages and was losing weight.

Our diagnosis by the Bio-Dynamo-Chromatic method was carcinoma. Energy conducted from the stomac and lungs was dissipated by the *B*-Chromatic Screen. Upon pal-

pation, a large tumor could be felt in the stomac. It was hard and resistant with ruf edges. There wer also tumors in the brests.

After about eight months' treatment with the powerful incandescent light and quartz light, oxygen-vapor inhalation and B-D-C therapy (Dr. White's *condenst out-of-doors* treatment), to which we added auto-condensation, the tumors had all disappeard and the woman seemd to be in good helth and said she had not felt so wel for years.

After about ten months' treatment, she gave a normal MM VR and it has remaind normal. The last test was made four months ago. We kept her under treatment two months after we considerd her cured, so as to be sure that she was going to remain cured and also to bild her up as much as possible.

It is now over a month since we discharged her as cured, and I wil defy anyone to find any trace of cancer, tuberculosis, or any other toxemia in her system.

Cases O and P

About eight months ago we had two cases of acute parenchymatous nefritis, each one the worst we hav ever seen. One was semi-comatose, eyes swollen nearly shut, legs and ankles so swollen that she could not get her shoes on.

We put them both to bed, put them on a fast and gave large drafts of water with a little lemon juice and sodium bicarbonate. We at once gave each one radiations from the powerful incandescent lamp and the quartz lamp, oxygen-vapor inhalation, and B-D-C therapy, to which we added auto-condensation.

In each one of these cases the urin showd about 50% albumin. In four days' time the albumin had entirely cleard up, and in ten days both cases wer discharged from the hospital. Up to date there has been no return of the nefritic symptoms.

We hav experimented with several cases of cystic goiter, both simple and exofthalmic, using only zone therapy by means of the Pulsoidal Current thru Dr. White's unipolar nasal electrode to the posterior wall of the nasofarynx. The results we hav achievd ar simply astounding.

In one case the goiter was reduced 2¼ inches in two days and in another case the growth was reduced 1½ inches in three days. The latter case was a young man and he said he wanted to go into the Navy, but they refused him because

of his large goiter. We treated him for 18 days, after which time the goiter had practically disappeard and he has been accepted into the Navy.

We observ that not only does the goiter disappear by this treatment but that all symptoms of exofthalmos and tachycardia, along with other accompaning symptoms, disappear in a remarkably short time.

I could go on reciting cases equally interesting for hours as we ar flooded with them, but the abov cases wil serv as examples of what we ar doing in our hospital and sanitorium in following out the teachings of Dr. George Starr White.

If it is admitted that the foregoing reports ar true or even half true, what is there to compare with the Bio-Dynamo-Chromatic system for diagnosis? Nothing has been claimd for it that cannot be convincingly demonstrated, and it is indeed interesting to demonstrate this work to skeptics. They invariably leave the diagnosing room converts to Doctor White's Bio-Dynamo-Chromatic system.

Not only is Dr. White's Bio-Dynamo-Chromatic system revolutionary, but his *"condenst out-of-doors"* system I believe has no peer.

Formerly we dredded to see patients come. We did not enjoy the practis of medicin because we did not conscientiously feel that we wer entitled to the patronage and confidence that people gave us. We did not feel that we wer doing enuf in return. Now, however, we hav gotten to the stage of success wherein we almost expect to cure or materially relieve every one who comes into our institution, and do it quickly.

As a result of this unique and wonderful and really scientific work, we hav been dragd out of that condition of apathy, or possibly lethargy, and taken on in its sted a spirit of enthusiasm for the practis of medicin that makes our practis now a plesure rather than a bore.

Our success with tuberculosis in particular has been so great that we expect to cure nearly every case that comes to us. In this expectation we ar surely warranted because we have not yet faild in a single case. Our routine diagnosis and treatment is that originated and taut by Dr. George Starr White, altho as an adjunct we use whatever else we find particularly indicated in a given case. However, we usually do not find much else than Dr. White's *condenst out-of-doors* system indicated.

I rejoice to say that we hav had our "troubles" with the old "orthodox" medical men. I say "rejoice" because while they kept us down for a while by trying to make the public think we wer fakirs, the public has finally become enlightend thru watching our success, and the expected reaction in our favor has arrived. The patients ar now coming to us from all over the United States and our only trouble at present is to find time and space for them.*

*See Part Three, Lecture I.—Diagnosis as a Specialty.

PART TWO

PART TWO. LECTURE I.

LIGHT AND COLOR AND OTHER FYSICAL FENOMENA SEEN IN THE LIGHT OF THE NEW FILOSOFY

It is astonishing how long it has taken the scientific world to break away from hypothetical explanations and understandings of fysical fenomena. Yet it is not quite so astonishing when we consider how chary minds ar of anything new, especially of new explanations; for, more than looking to the new evidence, the question of *authority* is considerd. This is strikingly illustrated by the history of the "theory" or rather the explanation of light.

Newton's corpuscular theory and the undulatory or wave theory of light wer rivals in Newton's day, but he so perfected his theory that, together with his *authority*, it prevaild in the scools for 125 years. Then the leading fysicists revived the "wave" theory and finally, more by their *authority* than by the facts, overthrew Newton's theory some 90 years ago.

We now hav a new explanation of light, and this question of *authority* is aptly illustrated in the review of "THE NEW PHILOSOPHY"* by the Boston Journal of Education, which, without pointing out a single weakness in the eight hundred pages of the new explanations, concludes with the following: "It would seem that his filosofy could be sumd up as an explanation of all hitherto inexplicable and doubtful fenomena by a hitherto unknown element, Rex. But we must hesitate to accept a completely new fysics from the pen of one man." Experimentally proven facts should govern, and *"authority"* considerd only in the event of a "tie vote."

What most commends or virtually demands the immediate acceptance of *"The New Philosophy,"* or more accurately, The New Fysics, is its tangibility, its freedom of theory and absence of all hypotheses. It is experimentally

*The new Philosophy, by Prof. Calvin S. Page. Publisht by Science Publishing Co., 24 W. Ontario Street, Chicago.

provable, harmonious, self-containd, and complete as to all the listed great fenomena, even adding to that list, Repulsion, as a distinct fenomenon, the counterpart of Cohesion. It is in line with my own work which is not only my understanding and opinion, but *experimentally obtaind facts.*

From the beginning, fysicists hav always regarded force and energy as something apart from matter, which they declared was inert, and erly seald their verdict in the property they named *"Inertia,"* which the new fysics proves is a great error.

Professor Page saw that energy and force must be containd in some kind of entity, and why not the known entity, MATTER. He saw that Cohesion is the attribute of the atoms of all matter. Then he discoverd REX which has Repulsion for its own atoms, and for which all other atoms hav a cohesiv affinity. This principle made his discovery of such universal importance that he named it REX—the prince of matter. Newton declared that "Matter is the plaything of Force," while Professor Page says, "Matter is the plaything of Matter."

REX is the most completely verified of any of the some ninety-od kinds of known atoms or matter. This is quite conclusivly proved from its definition, viz: *"Rex is an atomic kind of matter for which all other kinds of atoms hav a cohesiv affinity, while Rex atoms repel one another."* From this it is self-evident that of necessity it must be the most widely diffused of any kind of matter, and from the fact that it is virtually *light and heat,* it must be the universal matter.

In the New Fysics it is shown to be the atomic and molecular force which has so long been serving the fysicists in disguise. In the New Fysics the correct formula for a water molecule is H_2OR, but since R is an element in *every* molecule, it is not necessary to write it in any.

It is clearly evident that had Newton used his corpuscle alone for explaining color insted of supposing it was due to "fits" and "starts" between his corpuscle and the ether, he would hav had the truth of what constitutes light and color. (Color merely distinguishes the kind of light.)

To make my discoveries in fysical fenomena more redily and clearly understood, I wil mention some of the new facts of the New Fysics. There is a superabundance of evidence in Professor Page's work to prove that the "hypo-

thetical ether" does not exist. LIGHT is the individual atoms of Rex moving with light velocity. Rex produces gravitational action, but, owing to its self-repulsion, it has no weight and is not affected by gravitation. Now, since space is empty, Rex moves unhinderd thru interstellar space. Rex is the elastic, sustaining force of the atmosfere, the molecules of the air being bombarded by free Rex. There is one gallon of air molecules in 800 cubic feet of air. Hence the molecules of the air occupy only about 1/6,000 of the space of air-gas. Therefore, it can be seen why air is so transparent, because the Rex flying between and thru the molecules of the air ar light Rex. At night the velocity of the Rex in the air is around the velocity of 100,000 miles a second, which is not sufficient velocity or momentum to drive the Rex thru the cornea of the eye, but is sufficient for the owl, night-hawk, cat, etc.

We know that light is produced by the incandescence of matter, and we can thus understand what incandescence is—it is the breaking up of the cohesion of Rex and other atoms, and in 99% of the cases by the addition of surplus Rex. When lighting a match in a dark room, all the atoms of Rex striking the crater of the match ar repeld with light velocity; but these ar so few that it only dimly reveals the objects in the room. The stronger or larger the incandescence, the greater the illumination, but none put all the Rex into light velocity. The reason daylight cannot be duplicated is because the sun puts all the Rex in the atmosfere into light velocity.

Now COLOR reveals the velocity produced by various substances in the incandescent state, and the increasing stages of incandescence. The velocities decrease from white light (186,000 miles) thru the red, orange, yellow, green, blue, indigo, violet to black (140,000 miles). It is by the varying momenta of these velocities that the eye is affected by the sensations known as COLOR.

The present "theory" has one velocity for all "waves," which is most unscientific and contrary to all known wave motion, and the eye is required to distinguish between trillionths of an inch in length. This is wholly incredible as the eye can note only eight impressions to the second. If anyone can stil believe in "waves" he should read the whole contrary argument in "The New Philosophy."

WHITE LIGHT is the universal medium of exchange in colors in nature effected by reductions of that velocity;

and these reductions ar occasiond by the varying degrees of the molecular tension in the objects. A green orange is not changed to a yellow by pigments, as a painter requires, *but by a change in molecular tension.* A green piece of glass does not select the green out of the spectrum and reflect and transmit that, while absorbing "the other six colors" in some mysterious and unexplaind legerdemain, but changes all the white light into green, reflecting and transmitting the same. For if any other color than white light is used the glass is not green. Thus the law of the change of color is downward from the red to the violet.

In my experiments with light in diagnosis and therapeutics I am governd by change in color and these changes ar the records of diagnosis, and while the diagnosis is the valuable consideration, it is of benefit as wel as a satisfaction to know *why* and *how* the changes ar produced.

Every disease produces its peculiar kind of abnormal molecule and molecular tension (rate and mode of motion) else there would be onlv one disease. Since bv color we largely determin kinds of matter, I hav discoverd how to determin kinds of disease by determining the peculiar color or tension of each; and since nature is so fixt and unerring in its processes, the true conditions ar reveald where the personal diagnosis must be subject to many conditions not otherwise in open evidence.

The experimental evidence I hav been able to secure, that light is *velocity* insted of waves, is quite sufficient to establish the truth of the new fysics; for it is so closely linkt together that all must stand or fall by the breaking or establishing of any one link in the chain.

Electricity has become so useful and important that this has been cald the "Electrical Age." Yet one is at first startled when he reads in the New Fysics—"There is no such objectiv thing as electricity." Then it is explaind that it is like a river—only a *condition,*—and that it is a condition of Rex just as a river is a condition of water. Electricity is Rex flowing over conduction, or in a condition to flow as in batteries, by virtue of cohesiv affinity for the conductor and the repulsion between the rex atoms, the direction always being from the origin or largest quantity towards the least. All fenomena performd by electricity ar produced in other ways by rex without electricitv; hence electricity is the *commerce in rex* just as a river is commerce in water. Thus we arrive at the fundamental principles of the "New

Philosophy," namely, the three unexplaind things of atomic matter and the Cohesion and Repulsion of atoms, with which all the fenomena ar knowable and understandable.

Why electricity *seems* to be in the atmosfere is because of the presence of Rex. That a "river" in one condition is in the air, is known by the presence of the clouds, but they ar not a river until they reach the *condition* of a river, and in like manner Rex in the air is not electricity.

The last chapter in the "New Philosophy" shows that the electricity therein defined is the nervous force of the body and that such is the fact I hav proved by the discovery of the magnetic-meridian-sympathetic-vagal reflex. Thus the new fysics confirms the findings of the Magnetic Meridian by Rex in its electrical form in the body and the Rex in the air, and the Magnetic-Meridian findings sustain the deductions of the New Fysics.

Magnetism affects light and there ar very many magneto-optic fenomena known to all workers along these lines.

Light is unquestionably magnetic and electrical in nature, but it is extremely difficult to prove this relationship. Manv experiments hav, however, been made with magnetic metals less than one-millionth of an inch in thickness which prove the relationship beyond doubt. This is exactly in accord with Prof. Page's exhaustiv work, tho he did not prove it as it has been proved very recently.

The "Electron" According to the "New Philosophy"

There is a great deal being said about the *"electron,"* while there is no such thing as is understood, defind and explaind as the electron. It is a misnomer, and yet it is a very good name for what it really is.

Now first to disprove its existence as a corpuscle or minute entity as now commonly taut. It is considerd to hav something to do with electricity, (as its name implies), heat and light. That this cannot be true is proved by the fact that it has been isolated and weighd. Therefore since it has *weight*, it cannot be any part of heat, light or electricity, *all of which ar without weight.*

Second, it is claimd to be .001 part of an atom of hydrogen. Since it is admitted that no atom has ever been isolated, how could one one-thousandth of an atom be

isolated? And the Americana says it is inconceivable that orbits of electrons produce atoms, and must giv way to some more reasonable explanation of the atom.

Now, what is an electron or this thing that is "isolated and weighd" as an electron? "Electrons" ar *molecules,* and in Crooke's tube ar air molecules surcharged with Rex atoms from the electric current. Those flying from hot bodies ar air molecules charged with Rex from the heat of the substance.

Therefore it can now be very redily admitted that molecules composed of many atoms *may* hav been isolated and weighd while the atom has not been isolated, and very likely cannot be.

In like manner it can be shown that the supposed transmutation of some atoms and substances is merely a misunderstanding of the experiments. For if transmutation is true of any, it must be true of *all* matter, and but little credit should be given to the evidence of new and very rare elements, for if it wer possible or a law of nature, it should hav long ago been discoverd in the old and abundant kinds of matters that hav withstood constant mutations among themselvs for known ages without a single change in their nature being in evidence.

Professor Page is willing to record that, while evolution may be possible in the *forms or combinations* of matter, there is *no evolution in matter itself.*

FOTO-THERAPEUTICS
(Radiant Light Treatment)

TREATMENT

GENERAL CONSIDERATIONS

"Of all fysical fenomena, light is the most simple, the most sublime, the most beneficent. Its varying velocity is the pigment that paints the splendor of the universe."—Page.

"Light reveals the glories of the external world and yet is the most glorious of them all. It givs beauty, reveals beauty, and is itself the most beautiful. It is the analyzer, the truth teller, and the exposer of shams; for it shows things as they ar. Its infinit streams mesure off the univers and flow into our telescopes from stars which ar countless millions of miles away. On the other hand it descends to objects inconceivably small and reveals thru the microscope objects millions of times smaller than can be seen by the naked eye. Like all other fine forces, its movement is wonderfully soft and yet tender and powerful. Without its vivifying influence vegetable, animal, and human life must immediately perish from the erth and general ruin take place.

"We shal do wel, then, to consider this potential and beautiful principle of light and its component parts, for the more deeply we ponder into its inner luster, the more wil it present itself as a marvelous storehouse of power to vitalize, heal, refine and delight mankind."—Babbitt.

While light, which contains all colors, apparently has the greatest influence over general metabolism, nevertheless there ar certain colors which hav a specific influence, and as our blood takes the oxygen from the air for its use, so may the various cels of the body select such colors from the spectrum as they can best utilize for their individual needs. In other words, may the blood not take from the light such rates and modes of motion as ar in tune with the body vibrations?

It is generally conceded that light past thru glass wil not tan the skin, the theory being that the ultra-violet "waves" (which tan the skin) either hav "waves" too short to pass thru glass or that their speed is so limited that they cannot force their way thru.

By a long series of experiments I hav been able to tan the skin to deep brown by means of rays past thru glass, thus proving that some of the old theories regarding light ar erroneous.

No doubt the wearing of clothes, thus robbing the skin of its heritage, light, is one of the causes for the abridgment of longevity and for the many ils to which mankind is subject under his artificial mode of living.

Poorly ventilated and lighted homes, offises, factories, and public places all tend to rob the body of the very food it most needs, that is, light and oxygen.

It wil not be many years before we wil hav an entirely different form of mental and fysical disease to treat, owing to the popularity of "movie theaters." Never could a demon hav invented a thing more antagonistic to the needs of the natural condition of humans. As a rule the air in these theaters is stifling and laden with the diseasd exhalations of the promiscuous gathering. According to the nature of the surroundings, daylight is excluded and only a very little artificial light gains entrance. Last, but not least, the moving pictures on the screen, upon which the spectators try to focus their eyes, produce a nerv exhaustion that cannot be mesured. It has an effect not only upon the eyes, but upon the whole organism. It may be if the public demands it, "movie theaters" wil be constructed so that this state of affairs wil not be necessary.

The artificial and unnatural conditions in which most so-cald civilized human beings liv, all tend toward light and oxygen starvation. We all recognize the impossibility of quickly altering in any markt or beneficial degree modern conditions of life, but we ar able to offer humanity a means of overcoming to a certain extent the evil results of the metamorfosed conditions in which we liv. This we do with artificial light, color, and oxygen—*condenst out-of-doors.*

As a rule, drugs, chemicals, serums, and vaccines mask the real condition of a person insted of aiding nature to cure. Taking down the red flag does not necessarily make the right of way safe. It is being proved by sad experience

that serums and vaccines ar probably the most antagonistic to nature of any form of medication.

It is to be hoped that the time wil come when the public wil be enlightend enuf to hav laws enacted to protect the helthy individual from compulsory inoculation. However, before this can be accomplisht, the public must be liberated from the tyranny of State Medicin, and the *people* must hav the right to say whether their temple and that of their children shal be mutilated and inoculated with repulsiv, disease-producing serums and vaccines.

Proper living is conduciv to helth, and helth must naturally furnish immunity. No disease can gain entrance to the body unless the body is in some way redy to receive it. Probably radiant light in the form of *sunlight* is the greatest immunizing agent known. Next to sunlight, no doubt comes radiant light from the modern gas-fild, tungsten-filament lamps when placed in a suitable reflector. Such radiant light can be used by any physician and under his direction it can be utilized in homes as wel as offises for rectifying metabolism.

It is probably the ignorance of the general practitioner of the beneficial effects of radiant light and heat that has made Foto-Therapy so slow in coming into general use. However, the time has come when the people who employ physicians ar demanding the most modern and efficient fysical means for treating their ailments. Therefore it behooves every physician, who has the welfare of his patients uppermost in his mind, to equip himself for using this great therapeutic agency.

Radiant light and heat may not be cure-alls, but they ar no doubt the most valuable adjuncts to other modern methods.

The Lamps

There ar various styles and sizes of incandescent lamps and arc lamps. The latter hav many therapeutic values, and may in some cases be preferable to the incandescent, but, from a practical standpoint, the incandescent light seems to be superior.

The quartz, mercury-vapor lamps hav a field all their own and they ar discust in a subsequent lecture in Part Two.

Some consider that the small therapeutic lamps of from 35- to 50-candle power hav as much value as the larger ones, except that they do not cover so large an area

at a time. This, tho, does not seem to be so, judging from clinical observation, unless one be treating a very limited area, when 50- to 250-candle-power lamps giv very good results.

The reflectors in lamps for therapeutic use should be bilt only from patterns that hav been scientifically proved to be correct, as the value of the rays is greatly enhanst and the candle-power increast by being reflected in proper radiations. This reflection, insted of being by a parabolic reflector with one focal point, should be made by a corrugated reflector with conical side reflectors, which projects lines in parallel and crossing lines of radiation. (Fig. 146.)

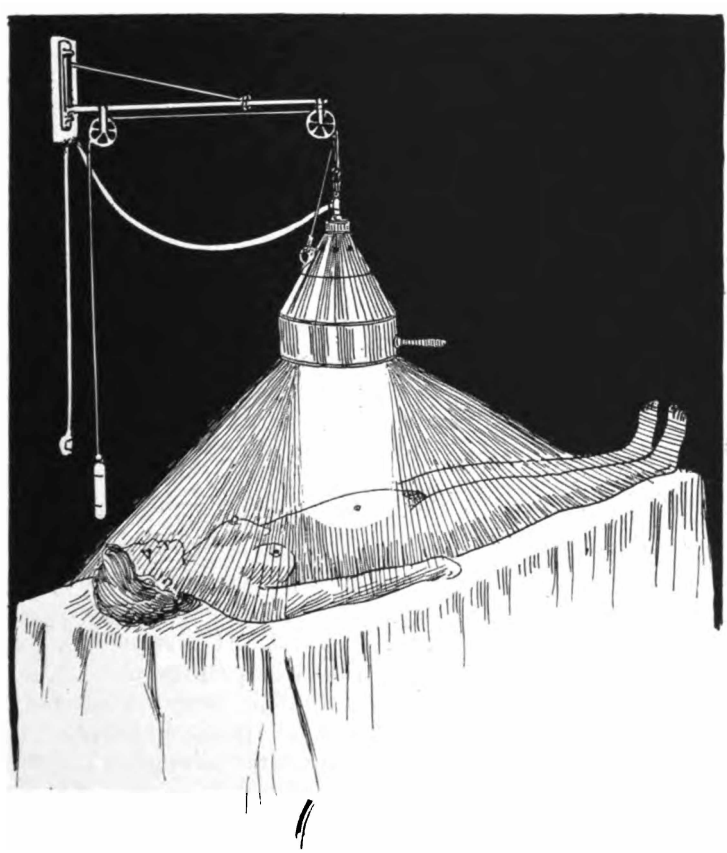


Fig. 146. Showing the ideal manner of giving Powerful Radiant Light Treatment. When the reflector is correctly made the radiations wil be about as illustrated.

Another way of bilding the reflector is to use one curvd on a larger radius, so the rays ar all parallel at all distances inside of 48 inches.

Carbon-filament lamps giv a much greater proportion of heat to light than do the tungsten lamps. For most conditions, the great amount of light given from the tungsten lamp seems to make it preferable.

Recently there hav been put on the market incandescent lamps giving from 500- to 3,000-candle-power, having the tungsten filament in argon gas at atmosferic pressure. I am now using these lamps and like them far better than the old style lamp.

The radiation of light from a carbon-filament lamp is about 1½%, and the balance of the energy is heat, while the light from the tungsten-filament, argon-gas fild lamp, is from 10%to 12%, and the rest of the energy heat.

Therapeutic Value of Light and Heat

Radiant Light and Heat ar best applied by means of the incandescent light, which fils the widest field of therapeutic indication. As it is deprived of most of the ultra-violet radiations, it can be applied for longer time without danger of producing a disagreeable hyperemia, or of severely tanning the surface of the skin, which consequences interfere, it seems, with the highest degree of general therapeutic efficiency.

(Tanning by means of the Quartz Light does not appear to interfere with the efficiency of Radiant Light treatment—on the contrary, it appears to enhance it.)

Many physicians seem to be of the opinion that "light is light," no matter from what source, but, spectroscopic analyses show very great differences. It is now recognized by the best authorities on foto-therapeutics that it is the yellow-green of the spectrum that is responsible for the nutritional influence light has in all poor metabolic conditions. Red light is irritating, non-actinic, non-germicidal, and stimulating; while the visible violet is just the opposit in its effects, being sedativ, powerfully chemical, bacteriacidal, and hypnotic. Because of these facts, it is important that light used in therapeutics should contain enuf red rays to produce the proper stimulation; enuf of the yellow-greens

to raise the percentage of the hemoglobin and thus increase its oxygen-carrying power; and be rich in blue-violets.

(Quartz Light appears to hav a selectiv action on the hemoglobin and appears to increase the oxygen-carrying power of the blood.)

It can be seen that radiant light, to be of the most therapeutic value, should contain all of the ful spectrum rays that go thru an incandescent lamp bulb. Ultra-violet rays wil only sparingly pass thru glass. That is the advantage of incandescent lamps over arc lights for general therapeutic effects.

The "wave length" is so "short" or the velocity so limited in the ultra-violet rays from the arc lamps that the skin is only superficially affected by them; besides, they seem to act as a barrier to other rays passing thru the tissue, because of the pigmentation of the epidermis. Arc lamps, for this reason ar not suitable for deep penetration treatments, tho the Quartz Light does, in some way, produce a general stimulation that the ordinary arc lamps do not.

As the "wave lengths" of colors increase and the frequency of their vibration diminishes from ultra-violet to infra-red, the penetration increases down the scale, while, conversely, it becomes more and more superficial in ascending—in other words, penetration is inversely as the frequency and directly as the "wave length." However, this theory wil hav to be modified to suit the new filosofy, viz.: the penetration is directly as the velocity—red penetrating deeper than violet.

According to the latest version, infra-red travels with so much greater velocity that it penetrates deeper, while ultra-violet travels so much more slowly that it cannot penetrate deeply as quickly as red.

Influence of Colors

1. Red weakens the processes of both assimilation and disassimilation.

2. Green light stands lower than white in regard to the accumulation of nitrogen, as wel as to qualitativ metamorfosis. Destructiv changes procede more vigorously in green light.

3. Yellow and violet lights induce the maximum of energy in all the vital processes, more complete metamorfosis prevailing under the influence of violet light.

4. Darkness causes a diminution in the exchange of nitrogen in the body and causes an immediate diminution in the amount of nitrogen in the urin.

5. Light containing the ful visible spectrum appears to giv the best general therapeutic results. (This seems to hav been clinically proved, but since the Quartz Light tecnic has been improved it also seems to giv very good results in general as wel as in localized treatment.)

It has been observd that workmen who ar compeld to labor in red-lighted rooms, suffer from intense nerv and mental excitement and hav a tendency to be quarrelsome. Red shades and draperies hav an irritating effect upon the inmates of a place so decorated. This can be explaind by the weakening influence of red light upon the processes of assimilation and disassimilation. The state of excitement of delirious patients who ar put in a red room is greatly increast. In several instances, smallpox patients who wer kept in a red room begd to be taken into the light, as their mental distress was so great. Some, if kept in a red-lighted room, suffer from delirium and frightful hallucinations, which at once pass away when they ar carried into white light. It is popular knowledge that a bull, and some other animals, wil become furious when seeing red objects. From these facts, it would seem that the frequencies of the red-ray region ar to be regarded as dynamic and excitativ to the nervous system in general, especially to the psychic functions.

The effects of colord lights upon nervous individuals ar wel known. This effect of light upon the mental and moral condition of individuals explains to a great degree why certain people hav a longing for certain colors, and exhibit it in their mode of dressing. There is on record a case of a lady physician, extremely anemic, who had a constant desire to hav red clothing, while before her sickness she always wore black. Upon the restoration of her helth, she no longer had the craving for red colors. Many times one's mental state can be diagnosed by observing what colors the patient craves or desires.

Colord light seems to exert its influence largely thru the cerebral cortex, as has been proved by several experiments upon dogs. Ballini says that the quieting action of light undoubtedly in part is due to a direct action upon the periferal nerv-endings, and is an effect of the chemical light energy upon the tissues and its absorption by the blood. The same writer says that the action of red light upon the brain

is brot about thru the eyes, and the intimate connection of the latter with the brain, thru the optic nerv.

Where there is exposure of large superficial areas of the body to the action of intense light energy, there results an increast flow of blood to the superficial vessels and a decreast flow to the internal organs.

Exposure to the action of light givs rise, fysiologically, to movements by reflex as wel as by direct action upon the tissues of animals (sneezing for example). According to certain experimenters, the circulation of blood, both of men and dogs, is markedly changed by irritation causd by the exposure of the eye to the energy of the green spectrum-rays. Burt found that a cameleon, blinded in one eye, became paler in color on the whole corresponding side of the body.

Salamanders, newts, lizards, and some species of frogs and toads ar similarly affected.

It has been found that the larvæ of the common white cabbage butterfly, which is a colorless insect, wil, if placed in boxes of various colors, produce butterflies within three to five generations of the exact shade of the box in which they wer grown.

These same metamorfosed butterflies, which might be brown, red, blue, or any other color, can by the reverse process of rearing them (that is in normal light without color) be slowly brot back to their natural white color within three to five generations.

Thus, it is seen that the reflex action, by means of the skin and eye, affects the change of matter; or we might put it in another way and say: *pigmentation is simply a reaction and accommodation of protoplasm to the action of light or other energy.*

The ability of various animals, birds, insects and fish to change their "protectiv coloring" to correspond with the surroundings, seems to vary with the sensitivness of the cel protoplasm, making up the external covering of the animal. For example, a few seconds ar enuf for the cameleon to change its color, while it takes several generations for the butterfly to change its color.

Altho red is spoken of as a warm color, blue as cold, yellow as cheerful, and green as restful, yet, there is a difference in the way different people ar affected—one may be plesantly imprest by a certain color while another is affected oppositly. This would indicate that some ar in tune with

certain ray-frequencies, and others with certain other frequencies, pointing to an inherent condition in constitution.

Upon the mind of man and his consciousness, no natural fenomenon produces so pronounst an effect as does light. It not alone is fysical food, but mental also. Scientists hav cald attention to the connection between colors and certain emotions. They hav observd that red and yellow light-energy exercized a bracing effect, while green and blue wer depressing. These same observations hav often been made. There is no question as to the influence of sunlight upon the spirit of the individual.

Influence of Light Energy

The influence of light-energy upon the respiration, puls and temperature has been found to be as follows:

When the nude body was exposed to light-energy from a 500-candle-power lamp, the puls dropt while its volume was augmented in every instance. In every observation, there was a rise of temperature ranging from one-tenth to one degree. Féré found that respiration was 19 to the minute in yellow light; 17, in green; and only 15, in red; and also, that under the influence of red light the puls became fuller and slower.

I hav observd that the 1,000-, 2,000-, and 3,000-candle-power, gas-fild lamps hav a similar effect, only that it is more profound.

Our suppositions concerning the influence of light energy upon the human organism rest largely upon hypotheses, but, judging from its action outside of the living organism, as wel as from its known effect upon plants and the lower animals, a certain amount of speculativ theory is permissible. Its mode of action upon the skin is firmly establisht. The fysiological effects of stimuli, chemical or mecanical, excite either direct or reflex nerv fenomena, relieve local congestion, and influence absorption of inflammatory products. These need only to be mentiond to indicate that, if no other interpretation is offerd for the action of light upon the living being, this action upon the skin offers a rational explanation of many of the fenomena produced thru this agency.

The sympathetic-vagal-reflexes prove in a more scientific way than any other the effects of radiant light and colors upon the human organism.

Blood Absorbs Light

It is evident that blood absorbs light to a very great extent, and in a somewhat peculiar manner. This is shown by the caracteristic absorption-spectra of greenish-yellow obtaind by Seyler and in the blue-violet obtaind by d'Arsonval. It is further emfasized by the experiments by Freund, made by determining the degree of penetration of the ultra-violet frequencies. It has been shown by Quincke that hemoglobin givs off its oxygen more quickly in the light than in the dark. This proves that light energy increases the oxidizing power in the living organism. (It has been conclusivly proved that the actinic rays from a Quartz, Mercury-Vapor lamp increase the oxidizing power of the blood.)

That light-energy influences the oxidation of the tissues is the concensus of opinion, and it is generally believd that this is owing largely to *a direct action upon the blood itself.*

According to Moleschott, *the amount of carbon dioxid eliminated is in direct ratio to the intensity of the light.* This givs a rational explanation of the marvelous effects of powerful light and heat upon intoxications and any disease producing a profound toxemia. This explains to a certain extent why we ar obtaining better results from the use of the very high power tungsten-filament lamps than from the old style carbon-filament lamps.

Fysiological Effects of Light and Heat

All repair is made thru the blood current; consequently any agency that wil affect the circulation may become of therapeutic value. Inflammation, which some call disease, is the voice of Nature calling for help to conquer the enemy. Germ invasion is met by this fenomenon of inflammation, and upon the fact as to whether the individual's opsonic index is high or low depends the victory.

There probably ar no more potent agencies than radiant light and heat capable of aiding Nature in this great fight. It is not antiflogistic remedies that Nature calls for, as they really operate against the end to be attaind. Radiant light and heat ar truly homeopathic as far as the maxim of "similia similibus curantur" is concernd, but not as regards dosage. Nature can make use of large doses of this agency; but not too large, since an excess of light stimulus is destructiv and paralyzing. If too much is given under the

wrong conditions, we hav deth of tissue or impairment of function; so judgment and skil must be exercized, as is the case with all other remedial mesures.

When we gain control of the circulation, we hav nearly gaind control of the disturbing element. Rational practitioners no longer treat the disease, but the symptoms-complex; and on no other remedial agencies can we rely more for this than on radiant light and heat.

As far back as history takes us, primitiv man used light and heat as healing agencies. Some of the first methods and conceptions seem to us crude, but they wer not any more so than many of the medicinal means taut in some of the largest medical colleges at the present time.

Since Finsen's time, the medical profession has lookt upon light from a more scientific standpoint. We all ar familiar with the fact that light and heat wil produce a hyperemia and, if carried further, an inflammation. We cannot hav inflammation without stasis, and, to relieve the one, we must remove the other. It is not rational to expect to do this entirely by means of drugs without depressing the whole system, as is done by stimulants and cathartics. Mecanical agencies, such as light, heat, electricity, manipulation, and vibration, seem to be the most potent factors for relieving stasis, and of these perhaps light and heat ar the foremost. They dilate the capillaries, enliven the circulation, open the swet glands, and induce activ metabolism, thus restoring the circulation and instituting prompt repair. They destroy germ processes, either by killing the offenders *in situ* or by raising the opsonic index.

The profound effect of radiant light and heat upon the body can be proved scientifically by the sympathetic-vagal-reflex.

The effects upon metabolism, local and general, ar owing to:

1. Increast local activity of elimination and tissue bilding.
2. Diffusion of heat by the channels of circulation.
3. Increast general perspiration.
4. Increast oxidation.
5. The local action upon the blood in the dilated capillaries.
6. The effects upon the remote spinal centers, owing to stimulation of the periferal end-neurons.

The effects upon simple inflammation ar:

1. To induce relaxation of tissue, with relief of pressure and pain.

2. To increase local metabolism and elimination, so as to relieve the tissues of the products of defectiv metabolism.

3. To remove erly stasis in conditions of mild traumatism, and to cure the condition if treated promptly after injury.

The effects in acute and sub-acute infectious conditions ar:

1. Increasing local hyperemia and relativly increasing fagocytosis at the site of infection.

2. Inhibiting activity of the micro-organisms.

3. Inducing perspiration and tissue oxidation, thereby stimulating elimination.

The derivativ effects when extensiv exposures ar made over the entire body ar:

1. Lessening the quantity of blood in the congested regions.

2. Lowering arterial tension.

3. Relieving the overworkt hart.

4. Eliminating of products resulting from impaird metabolism.

General Application

Radiant light and heat should be applied to the uncoverd skin. For general tonic effects, the rays should be applied to the entire body, which should be in a recumbent position (Figs. 146 and 147). The rays of light should fall perpendicularly to the body and the reflector should come as near as possible to the skin without injuring it.

The tecnic for using carbon filament lamps is entirely different from that for using the tungsten-filament, gas-fild lamps. (The tecnic for using the Quartz Light is explaind in a later lecture.)

To obtain the effects of the heat along with the light, the carbon-filament lamp must be continually moved back and forth over the area being treated.

If the entire body is being treated with either style of lamp, it seems better to treat the back first, as that produces general relaxation, and then the front of the body.

To obtain the best results from the *tungsten-filament, gas-fild lamps*, the tecnic is as follows:

TECNIC FOR GAS-FILD LAMPS

For prolongd treatment over a certain area, the lamp should be correctly placed so that the radiations come directly over the part to be treated, and left in that position for from 20 to 60 minutes, depending upon the condition. The globe of the lamp should be from 28 to 36 inches distant from the skin, depending upon the reaction required and the sensitivness of the skin. (Figs. 146, 147.)

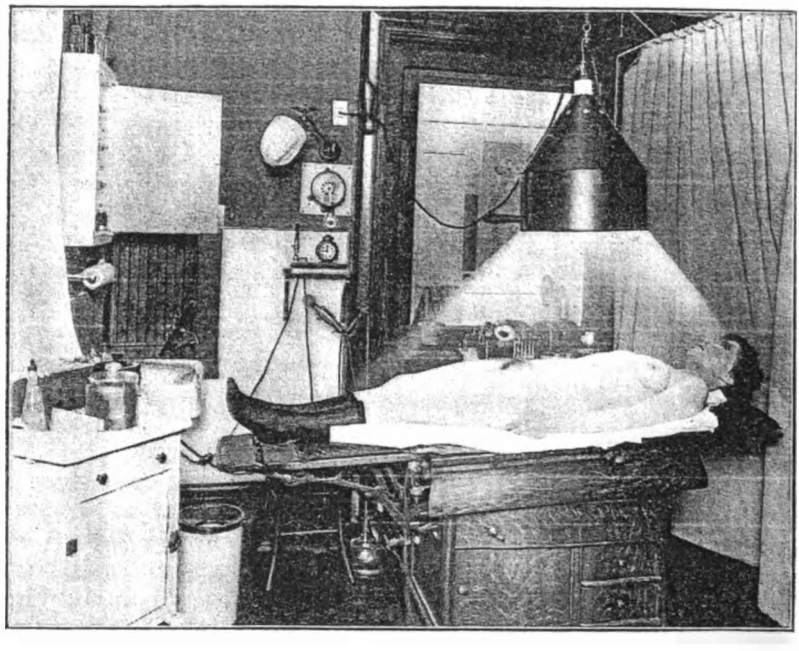


Fig. 147. Showing the tecnic for using radiation from the powerful incandescent lamp over the entire body. Notis that the counterweight is held in place by a cord, so the lamp cannot change position during the treatment. Notis that a time-clock switch is so arranged that it can cut the light off when the time is up.

This illustration shows one corner of one of the author's treatment rooms. Notis the Metronomic Interrupter is used in connection with the Universalmode and how they ar so placed that they can be used in connection with the Big Lamp. The gas fixture seen over the time-clock switch has one of my colord silk electric light screens on it.

This prolongd, direct method of using this powerful lamp is giving me and also my pupils results that we had never anticipated and that never could hav been obtaind by any other agency or by any other tecnic.

In some instances where I wish to derive very markt and rapid effects from the heat and light of this lamp, I place the shade a little nearer the body and keep the surface of the body cool by blowing comprest air over it, using the air-spreding tube shown in Fig. 149. This tube fits any ordinary air cut-off valv. (The comprest air outfit I use is shown in Fig. 150. I also show two other styles for the benefit of my readers.)

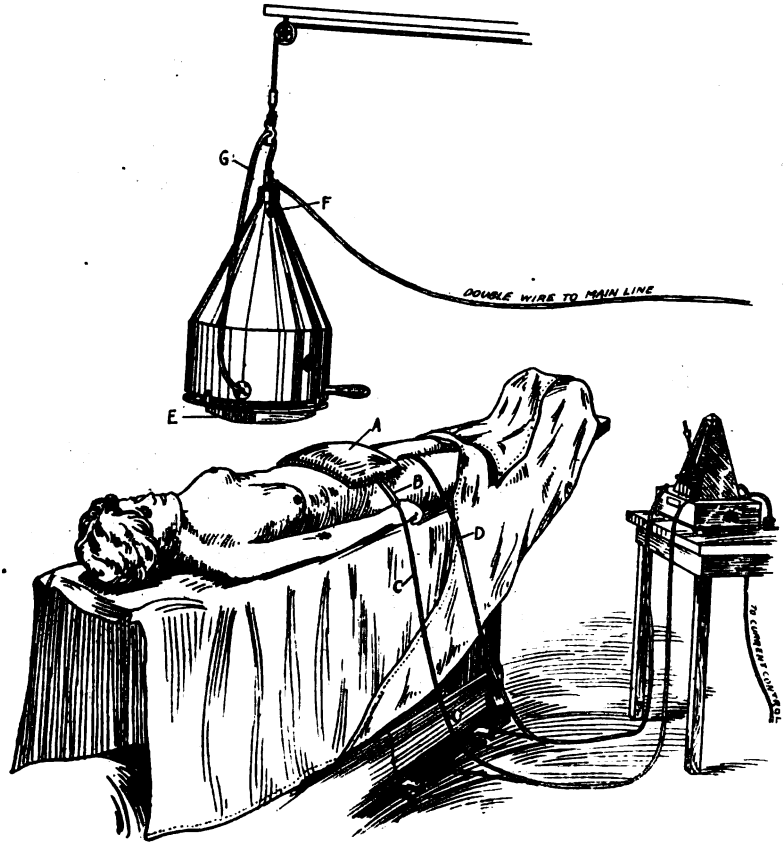


Fig. 148. Showing manner of using Powerful Radiant Light, sand pad, and Pulsoidal Current in vagina or rectum. This same modality is correct for some pathological conditions of stomac and gall bladder. The lamp bulb is about 36 inches abov the skin of the patient.

The "wings" *E* on the lamp shade ar for producing a breeze over the body, if the old style tecnic is employd. For the new tecnic they ar not required. *A* shows a sand pad, *B* a rubber tube, *C* and *D* conducting wires to Metronomic Interrupter or other electrical device. (The lecture on Electrical Modalities fully explains this.)

Twisting of the lamp shade, with the wing pieces on (Fig. 148), wil also create a breeze over the body and enable one to use more profound heat than can be used without circulating air rapidly over the body. I hav found that an ordinary electric fan is not suitable for this work, because it does not localize the breeze enuf, and many times produces a contraction of the skin over some other area, causing an acute congestion and consequent pain and stifness.

Fig. 146 illustrates the tecnic for using the tungsten-filament, gas-fild lamp. Notis that the maximum rays fall upon the area of the abdomen to be treated and that the less powerful rays radiate over nearly the whole body. (Fig. 147 shows a general diffusing of rays.)

By following out such a tecnic, we not only get all the heat the patient can possibly endure without blistering the skin, but we get nearly ten times as much light as from a carbon-filament lamp.

Some users of the carbon-filament lamps say they get better results with the carbon-filament lamp than they do

Fig. 149. Showing my Air-Spreding Tube for blowing comprest air over the body. Manufactured by DeVilbiss Mfg. Co., Toledo, Ohio.

with the tungsten-filament lamp. There surely must be some error in their tecnic, or they hav not workt this out scientifically. I hav proved to my entire satisfaction, not only from my own work with lamps of all kinds for years, but from the reports of hundreds of users of the tungsten-filament, gas-fild lamps, that they ar the better for general use.

(If a person has one of the old style shades made for a special style carbon-filament lamp, they can redily hav that changed so as to fit the standard 1,000 or 1,500 watt tungsten-filament, gas-fild lamp. This is done by putting a "Jumbo" socket into the shade and re-arranging the hood. Fig. 148 shows how I hav re-arranged such a shade.)

Fig. 145 illustrates the tecnic for treating urethral or prostatic conditions. For treating the perineum and external generativ organs of the female, the patient and lamp ar to be placed in the same position as shown in this illustration. Notis that the thighs ar coverd with asbestos paper. This is easily done by first covering the thighs with cheesecloth

and putting the asbestos paper over it. That keeps the asbestos paper in a clean condition.

This treatment for *specific urethritis* is probably the best known at the present time. More has been said regarding this under the hed of Gonorrhea.

When employing the very high candle power lamps, the operator should wear colord goggles and some opaque substance, such as chamois skin, over the hand he uses in stroking the body. When practicable, the patients themselvs

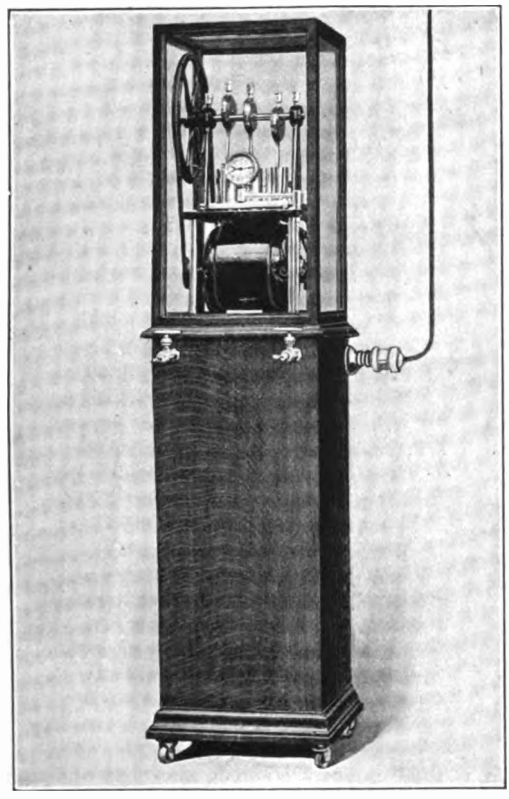


Fig. 150. The Sorensen Automatic Air Compressor Unit manufactured by C. M. Sorensen Co., Inc., New York City. Outfit No 1 consists of a three-cylinder eccentric pump, 1-16 H.P. motor, automatic cut-off, automatic cut-out, pressure gage and a five-gallon storage tank. All mounted in a highly finisht oak, mahogany or white enameld cabinet, with cord and socket and two outlet valvs, as shown, on front or sides, as preferd. Dimensions: 12 x 12 x 46 inches high. This outfit I hav found to be just right for compressing air for any purpose in a physician's offis.

may stroke the body when too much heat is felt. The patients must be instructed to keep their eyes closed when they ar not protected, but their eyes should be wel protected by opaque cloth inside of a piece of cheesecloth that can be washt. *Let patients hav their own eye protector.*

When the skin is very sensitiv and one wishes to bring about a profound hyperemia, applying a blast of cold air

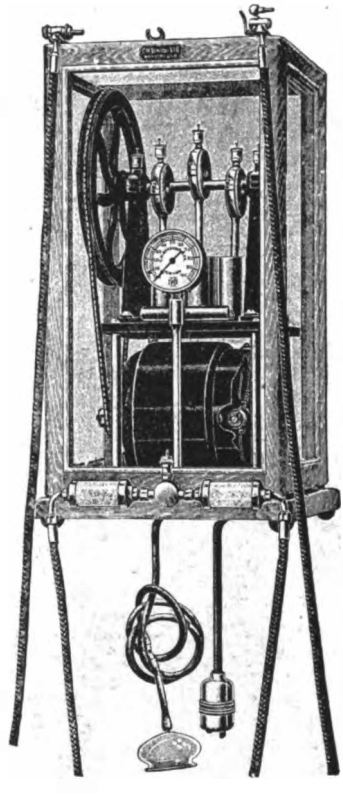


Fig. 151. The Sorensen Tankless Air Compressor Outfit No. 20.

This outfit is used extensivly among the nose and throat specialists. It wil giv an instant pressure from zero to 50 lbs. It wil maintain a stedy, continuous pressure of 30 to 40 lbs. while using a DeVilbiss Spray.

The outfit consists of a 1-6 H.P. motor, a three-cylinder eccentric pump with pressure gage mounted in a fine oak, mahogany or white enameld cabinet; two 5-foot silk-coverd pressure tubes with cut-offs attacht, one 5-foot rubber tube with suction cup and suction release, one pressure regulator and purifier. Cord and plug redy to use.

Dimensions: 21 inches high by 12 inches square base.

This outfit can be used for all kinds of offis comprest air work.

thru an air-spreding tube connected to a comprest-air apparatus is very efficient (Figs. 149 and 150). I hav had wingd pieces attacht to some of my shades in such a way that the motion of the lamp, either back or forth, or sideways or twisting, wil create a breeze over the body (Fig. 148). This enables me to bring about a more profound hyperemia in a shorter time than is possible without such a device, and without any discomfort to the patient. This however is not necessary if one carries out the tecnic as abov given for high candle-power lamps.

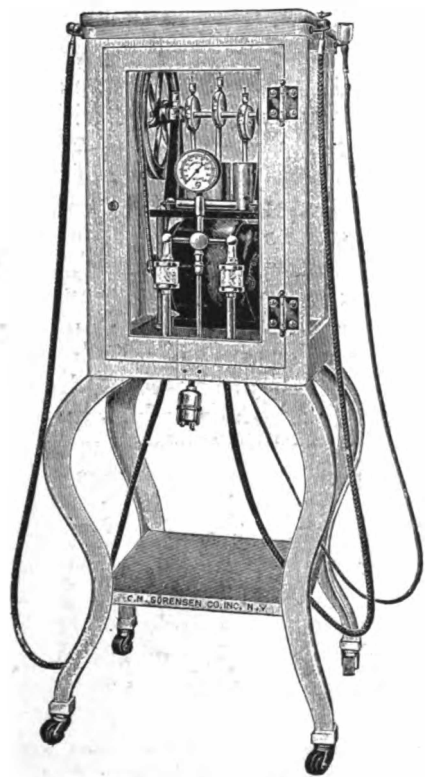


Fig. 152. The Sorensen Tankless Air Compressor Outfit No. 220. This attractiv specialist's outfit is the finest ever attempted. The compressor is bilt into a strongly made steel cabinet, with hard baked white enameld finish, nickel plated lock and hinges, polisht beveld glass front door and sides.

The compressor is identical with that of the No. 20, excepting that the purifiers ar placed within the cabinet. The compressor is absolutely noiseless, due to the solid construction and bild of the cabinet.

Dimensions: 47 inches high, 18 inches wide and 16 inches deep.

Radiant light and heat ar being satisfactorily employd in connection with sinusoidalization, vibration and other agencies in splancnic neurasthenia, goiter, reumatism, gout, sciatica, lumbago, torticolis, asthma, gastric diseases, sprains, neuroses, intermittent hart, high blood pressure, kidney diseases, sexual weakness, catarrh of middle-ear, earake, tonsilitis, suppurativ tonsils, catarrh of the cervix uteri, amenorrhea, dysmenorrhea, professional paralysis, infantile paralysis, cancer, psoriasis, eczema, acne, and many other conditions, especially syfilis. Incandescent-light baths seem to enhance the effects of mercury in the treatment of syfilis and its sequellæ.

For carcinoma, very good results ar obtaind from the 2,000- or 3,000-candle-power lamp and oxygen vapor—both employd daily. The quartz light used with the radiant light greatly enhances the treatment.

For x-ray burns and for all forms of infection, no better antidotes ar known than radiant light and heat.

For open wounds no better remedy is known than radiant light—incandescent or quartz.

The more I study Light from a therapeutic standpoint, and also the use of colors, the more I am convinst that Dr. Babbitt is right when he says, "Sunlight constitutes a truly celestial materia medica more potent and enduring than any cruder element, provided we know how to deal with it. Minerals ar at the lowest end of Nature's scale of forces and ar so crude that their particles cannot float in the atmosfere. Consequently they ar held down in the bosom of the erth. The vegetable world, which contains all forms of nourishment necessary for the human body, is devoid of the coarser mineral elements, which ar sifted out by a powerful and most ingenious process in Nature's perfect laboratory. *We cannot be hamperd and confined within the narrow walls of any restricted method of practis, which excludes all that some exclusiv company of persons may not approve. Freedom of thot and action within rational bounds should be demanded by all who embark in any healing ministry, or they wil soon find their usefulness painfully limited.*"

The more I study natural forces in relation to diagnosis and therapeutics, the more I am imprest with Dr. Babbitt's comprehensiv statement, "Harmony cannot be brot about until Nature's affinities ar satisfied."

THERAPEUTIC LAMPS

Figs. 148 and 153 show styles of therapeutic lamp shades that I use.

The hood mesures sixteen inches in diameter at the bottom of the apron. The apron is seven inches deep. The conical portion mesures twelv inches on the slant.

F represents one of the eight three-quarter-inch-ventilation holes that I designd for this shade many years ago.

Near the wooden handle is an observation hole such as I used to employ when using a carbon lamp but it is not as necessary when following out my new tecnic of employing a very high candle power, gas-fild lamp.

G represents the adjusting rod first used, I think, on the leucodescent reflector for setting the shade at any angle desired.

E represents the aluminum wing pieces that I hav designd to attach to the bottom of the shade by means of a suitable arrangement. The object of these wing pieces is to create a breeze over the body when the lamp is used for treating the whole body at a time and moving it back and forth, as was the tecnic when using the carbon-filament lamp. (They ar not necessary with the new tecnic.)

It wil be notist in this engraving that the double-feed wire is not used over the pully which suspends the lamp. This construction is far safer than passing the feed wire over the pully and using it as a suspensory cable, and it is recognized as standard by the National Board of Underwriters altho the method used on most of the cheaper models is not considerd safe by them.

The inside of this shade has fitted over the globe a corrugated aluminum reflector. The inside of the shade is silver-plated. Altho this style of lamp shade is more expensiv than many on the market, yet I think it is wel worth the difference in price, and other therapeutic-lamp shade manufacturers could make as good a shade, if there wer a demand for it. (Some hav recently been put on the market—Fig. 153, and more ar sure to follow.)

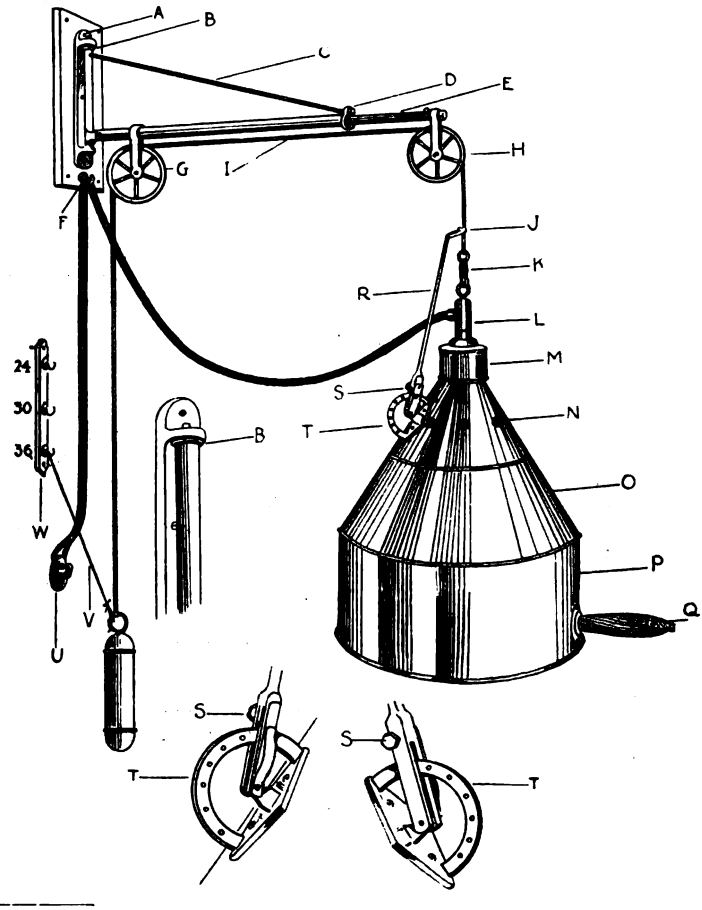
I am now using 1,500-watt, gas-fild lamps, made by The General Electric Co., under the trade name of "Sunbeam" in preference to any other. From such a reflecting shade as abov described, these lamps radiate approximately 3,000-candle power.

A New Lamp

Fig. 153 illustrates one of the lamps recently designd by me to meet the requirements of my pupils.

The *tecnic* for using such a lamp in treating a definit area, such as the stomac, is to set the lamp thirty-six inches from the body and leave it in that position for from 20 to 60 minutes, depending upon the effect desired (Fig. 146).

Having the lamp held by a cord *V* and the counterweight heavier than the lamp makes it impossible for the lamp to come nearer to the patient and thus injure her dur-



*I. W. Long, Columbus, Ohio, has just gotten out a powerful therapeutic lamp to meet my requirements. The illustrations for same reacht me too late to be shown in this edition.

Fig. 153. The "Sun-Ray" Therapeutic Lamp, manufactured by J. W. Wilferth, Los Angeles, Calif.

Fig. illustrates this lamp in detail.

A is the base of the bracket support.

B (also represented in detail) represents the "lock washer" which is a hevy spring washer split and spred so it is in reality one turn of a steel spring. This makes friction on the swinging post and holds the bracket at any angle, right or left, at which it is placed. This is a very valuable feature.

C represents a support which is securely lockt at the swivel post *B* and at the angle ring *D*.

E is a sliding tube which telescopes into the main bracket tube. Just back of *D* is a thum screw which allows one to easily and quickly move *E* out or in as desired.

F is a parallel wire conducting cable held over a suitable hanger so as to make an even pul on the lamp.

G and *H* ar brass grooved wheels over which runs the braided wire cable *I*, at the end of which is attacht a beautifully finisht counterweight, which is a little hevier than the lamp.

J represents a ring thru which the cable *I* passes.

K represents a wrought iron steel spring clasp which holds the lamp in an absolutely safe manner and at the same time makes it easy to detach for cleaning or any other purpose.

L is a specially made hed for attaching the lamp shade to the wire cable and at the same time acts as a very neat and suitable ferrul and bushing for the conducting cable.

M is a small hood covering the large porcelain lamp socket. Notis that this lamp socket is placed outside of the main part of the shade and, being coverd with spun brass, it has a very finisht appearance.

N represents ventilating holes which ar in the conical part of the reflector *O*.

P represents the apron to this shade, and this apron is made seven inches deep. That is another very important feature in such a shade.

The conical portion *O* is 12 inches on the slant, and with the apron 8 inches we hav the correct dimensions for a 1500-watt, gas-fild lamp.

Q represents the handle which is bolted thru the apron in a very substantial manner.

R is the tilting rod having the ring *J* at the upper end, thru which the cable *I* passes.

S is the hed of a plunger which disengages a metal nipple which engages in the holes of the circular holder *T*.

T is a circular piece of metal firmly attacht to the shade. It has holes into which the plunger *S* can engage, holding the lamp shade firmly at any angle desired.

U represents the wall switch.

V represents a cord that is attacht to a wall cleat *W*. This cord, when it is at 36, means that the globe of the lamp is 36 inches from the patient. When it is at 30, it means it is 30 inches from the patient. When it is at 24, it means it is 24 inches from the patient. Other hooks can be put in to suit the operator. This is a very important feature, as the tecnic for using this style of lamp is not the same as for using the old style carbon lamp.

The reflection from this lamp is not on a parabolic order. It has a corrugated reflector which, with the conical side reflectors, breaks the rays up in such a manner that there wil not be one focus but many foci, or practically parallel rays, thus minimizing the danger of blistering the patient.

ing treatment. This does away with the necessity of having an attendant right by the patient all the time. One assistant can attend to six patients and six lamps at one time when carrying out this tecnic.

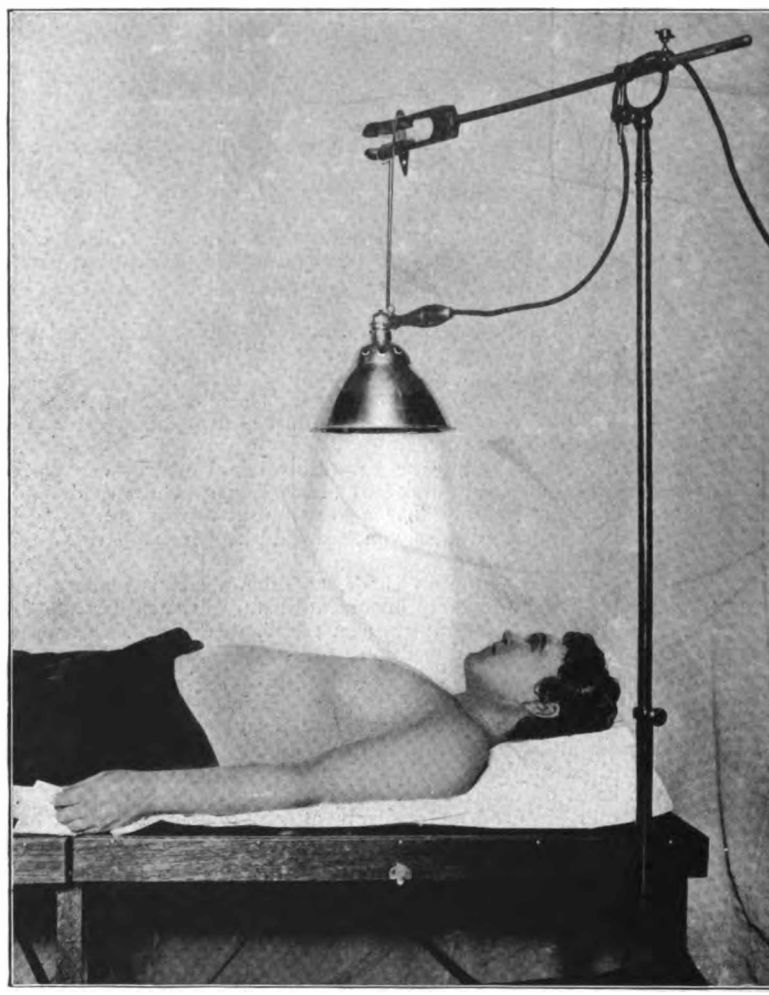


Fig. 154. Showing a new, portable lamp reflector carrying an incandescent lamp of about 500-candle power. This shade we designd to meet the demand for a powerful portable lamp. It is manufactured by J. W. Wilferth, Los Angeles, Calif.

This illustration shows how the lamp can be used in the home or offis. The lamp can be suspended by a cord or chain from the ceiling or from an x-ray-tube holder as illustrated. It can also be held in the hand.

By using a lamp of this style, one gets all the heat the patient can bear and at the same time about ten times as much light as can be had from the carbon-filament lamp.

The lamp I advize used in this reflector is a 1500-watt "Sunbeam" lamp, manufactured by the General Electric Co. Such a lamp in this shade givs approximately 3,000 candle power.

Figs. 154, 155 and 156 show my latest portable lamp

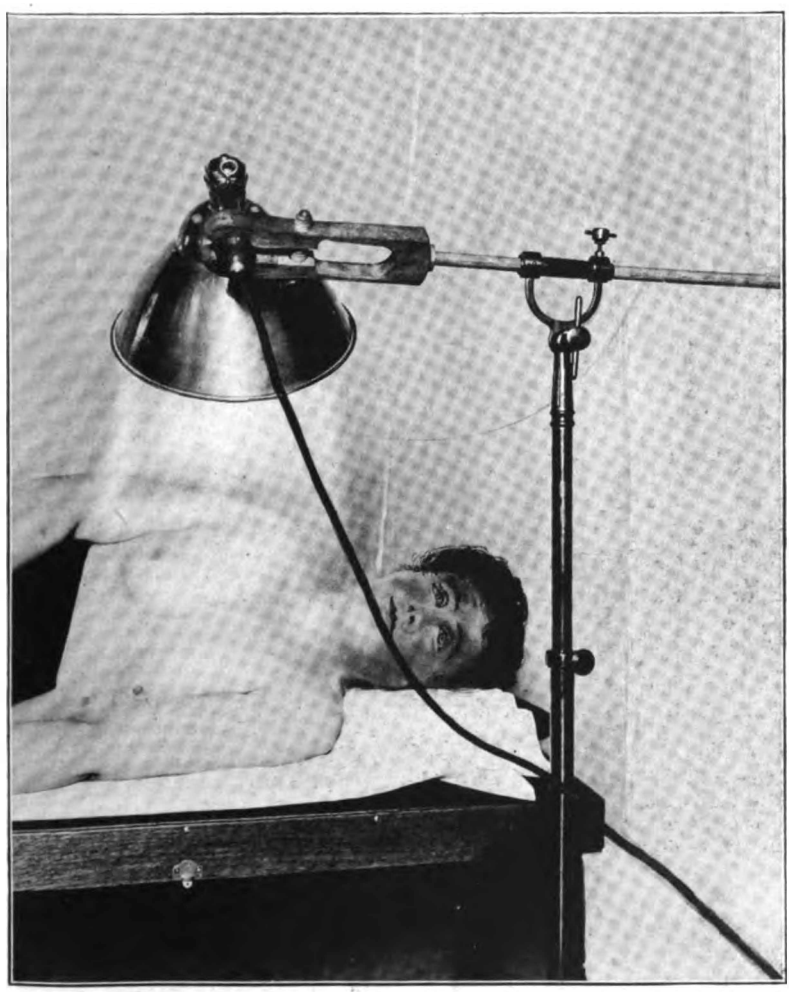


Fig. 155. Showing the new powerful incandescent portable lamp held in an x-ray-tube holder. It could be held by hand also.

for giving powerful radiant-light treatments. These illustrations also show the tecnic. The lamp should be placed as near to patient as possible and not blister the skin. Then leave the lamp in that position for several minutes. Such a lamp as this givs about ten times as much light as any ordinary portable lamp and at the same time it givs all the heat the patient can possibly bear.

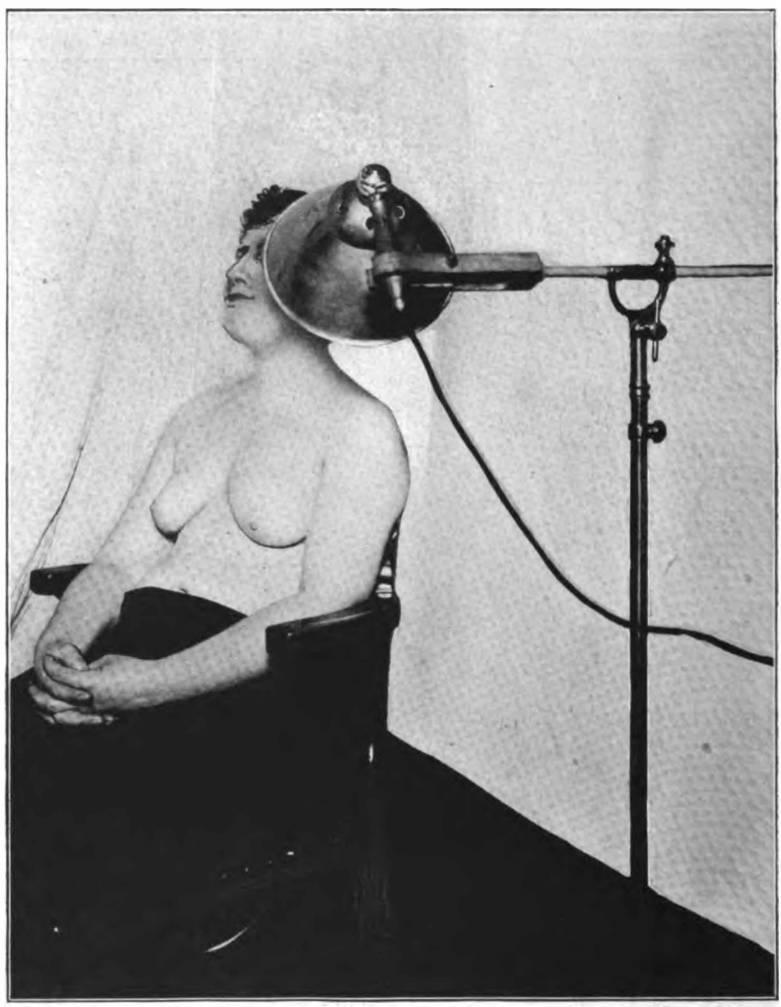


Fig. 156. Showing the new, powerful incandescent portable lamp in use on a patient while sitting in a chair. The lamp can be held by hand also.

(I do not want the reader for one moment to think that the large lamp shades and reflectors that ar illustrated in this book ar the only ones or the best ones. I hav illustrated such as I use and am familiar with, but the demand for such shades is increasing so rapidly that new and improved ones ar coming out all the time. I advize every one before buying any lamp shade and reflector, whether large or small, to post himself as wel as possible first. What is best today is not necessarily the best tomorrow. In fact, I expect great improvements wil be made in incandescent lamp reflectors for therapeutic use.

There is a chance for great improvement in all incandescent therapeutic lamp shades and reflectors. Probably the reason that these improvements hav not been more rapidly made is because of the expense necessarily incurd to get them out and the apathy of the medical profession in taking up this great therapeutic agency—powerful incandescent radiant light.)

THE "THERMOLIGHT"

(*A New Radiant Light and Heat Applicator*)

For anyone who wishes to use a small radiant light and heat lamp in which the proportion of heat is far in excess of the light, the lamp illustrated in Figs. 157 and 158 I think, is the best yet on the market.

This lamp wil meet the desires of those who wish a carbon-filament lamp of a handy size. Personally I prefer the tungsten-filament, gas-fild lamp for all therapeutic procedures, because with that I can get all the heat the patient can stand and at the same time nearly ten times as much light as is given from the carbon-filament lamp. Nevertheless good men hav different views on this subject, and this carbon-filament lamp sold under the trade name of "Thermolight" is worthy of mention.

Fig. 159 shows an excellent Radiant Light and Heat Applicator. This applicator is so constructed that it can be used over the back of one sitting up in bed, or it can be placed over the body of one in bed. As it contains four lamps the heat can be regulated to a nicety. This device is very useful for home treatment.

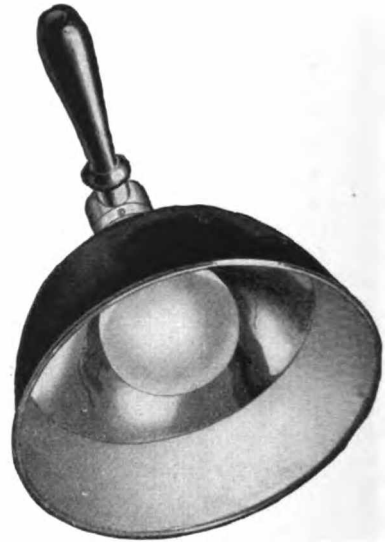


Fig. 157 Fig. 158

The "Thermolight" or Radiant Light and Heat Applicator, manufactured by H. G. McFadden Co., 38 Warren st., New York City.

The following description of this lamp is taken from the American Journal of Electrotherapeutics and Radiology of October, 1917:

The "thermolight" is a scientifically made instrument, every detail of its construction having been carefully considerd in accordance with the underlying principle for the correct radiation of radiant light and heat. The important feature of the lamp is that it is so constructed that the rays do not focus. It is used with a regular Edison 125 volt, 200-watt, carbon-filament lamp. The position of the reflector is such that the rays ar parallel, rendering all the radiations projected either by direct radiation or reflection in parallel. Practically all the light and heat generated by the lamp ar thus preservd. The administration of the radiant energy by the apparatus is, therefore, most practical and economic.

The radiations ar effectiv over an area of approximately 50 square inches, and ar not focust to a small burning spot, making it possible for a reflecting lamp to be used for applications of light suspended over a part as long as is required in cases demanding more or less continuous treatment.

As stated abov, this lamp is free from the objectionable features of construction of most therapeutic lamps on the market, as those constructed with small incasement, and not ventilated, rapidly destroy the lamps besides projecting a focal radiation, which beyond the focal spot forms a ring of light around a dark area, increasing in circumference with the increase of distance at which it is suspended from the patient. The only way such a lamp can be made of any practical value is to be constantly moved about, whereas the "thermolight" suspended projects parallel rays with an even radiation of light over the surface treated.

Radiant Light and Heat per Vaginam

Fig. 160 illustrates my Radiant Light and Heat Localizer. It also shows the standard wooden vaginal speculum that can be bot at any sugical outfit store. These wooden specula come in sets of three. Hard rubber can be used in place of wood, if desired. Metal for this purpose wil not do as wel as wood or rubber. The Radiant Light and Heat Localizer is made of tin or other metal, coverd with asbestos. The dispersing end of this funnel-shaped localizer is made of soft rubber and fits inside the speculum.

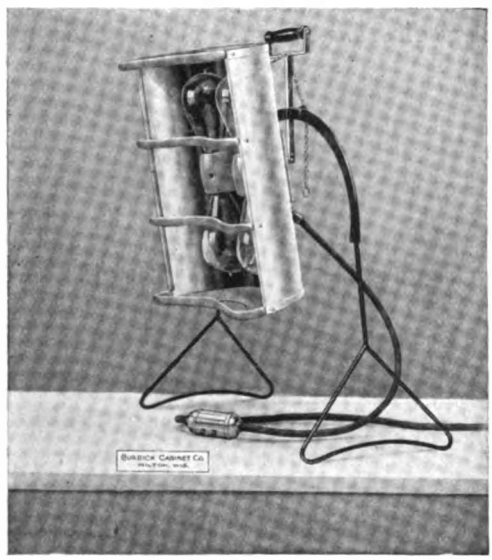


Fig. 159. One of the Burdick's Radiant Light Applicators. This can be used while patient is in bed or sitting up. For home use it is excellent. This Radiant Light Applicator is far superior to an electric heating pad, when it can be used. Light heat is always superior to dark heat.

Tecnic

I first swab the vagina out wel with an antiseptic solution, then lubricate a one-piece speculum as illustrated, and place it into the vagina with the elongated part of the speculum directed into the cul-de-sac, allowing the cervix to be in plain view thru the speculum. The patient is put in as comfortable a position as possible with the thighs flext. I place this funnel-shaped director so the dispersing end is

wel up in the speculum. I then take a hand therapeutic lamp with a shade that just fits inside the receiving end of the funnel, and turn on the light. I let the heat and light radiate from this lamp until the patient describes the heat as "uncomfortable," when I withdraw the lamp. As a rule the patient wil not feel the heat as uncomfortable for five minutes altho the light is radiating on the cervix all the time.

If I use a wooden speculum, I hav one for each patient. If I use hard rubber, it can be sterilized and used on more than one patient. Metal is not good as the heat is communicated too much to the adjoining parts. A patient can stand a great amount of light and heat over the cervix uteri and not feel uncomfortable. (*I am now using the Quartz Light thru special applicators in place of the abov.*)

Fig. 160. Showing a simple Radiant Light and Heat Localizer for vaginal and ear treatments. Made for me by Knauth Bros., New York City.

Radiant Light and Heat per Auram

Fig. 160 shows also an attachment for using this same Radiant Light and Heat Localizer in the ear. An ordinary ear speculum of the style illustrated wil fit in the soft rubber, dispersing end of the localizer. I find this a very efficient method of directing radiant light on the ear drum, altho it requires an assistant to help do it as the pinna has to be drawn upward and backward when placing the speculum *in situ*.

ELECTRIC LIGHT BATHS

Electric-Light-Bath Cabinets

Another excellent method of using radiant light and heat for general treatment, to bring about rapid perspiration, is the use of the bath cabinet.

I hav found that most of the electric-light-bath cabinets ar wrongly constructed in that they ar made practically air-tight. We know that a wel ventilated room can be heated more quickly than one that is kept closed. There should be a ventilating hole in the bottom of the bath cabinet.

The lining of the cabinet seems to be better made of opaque glass than of mirrors. From fifty to one hundred 60-watt tungsten lamps seem to be required.

The cabinet should be about forty inches square and high enuf so that a large person can conveniently sit on the stool and the lid close around his neck. There should be an air vent at the back which can be conveniently placed, one on each side of the patient's hed. A two-inch hole on each side of the hed and a three-inch hole in the bottom ar about right. Of course there must be holes put in the baseboard of the old style cabinet to allow the air to go under unless the cabinet is placed on posts about three or four inches high. This leaves a place for the accumulation of dirt and the cabinet is necessarily quite hevy and too cumbersome to move about. Therefore the ventilation can come in by a galvanized iron pipe thru the baseboard to the central ventilating hole. Such a pipe on each side of the cabinet, or on the front is ideal, said pipe to be coverd with a brass wire mesh. This pipe can be kept clean by occasionally blowing in a blast of air from the inside.

It is wel to hav the switches on the *outside* of the cabinet so the patient cannot operate them from within and so as to comply with the rules of the underwriters. Some cabinets hav switches both outside and inside.

Actual experience seems to prove that a large volume of light, in proportion to the heat, is desirable.

The cabinet in which the patient is erect is preferable to the one in which the patient is recumbent.

It is very desirable to hav a push button within the cabinet so the patient can ring a bel to call an attendant if they begin to feel sick. A cloth wrung from cold water and put on the hed wil generally prevent a sensitiv individual from becoming nauseated.

The electric-light bath seems to be indicated in all forms of arterio-sclerosis and its sequellæ. All reumatic conditions seem to be greatly relievd by the electric-light bath. Diseases of the respiratory, as wel as of the urinary system, ar greatly relievd by the electric-light bath. In fact, inasmuch as intense light along with heat so greatly enhances metabolism, there is no condition that is not benefited if this modality is employd judiciously.

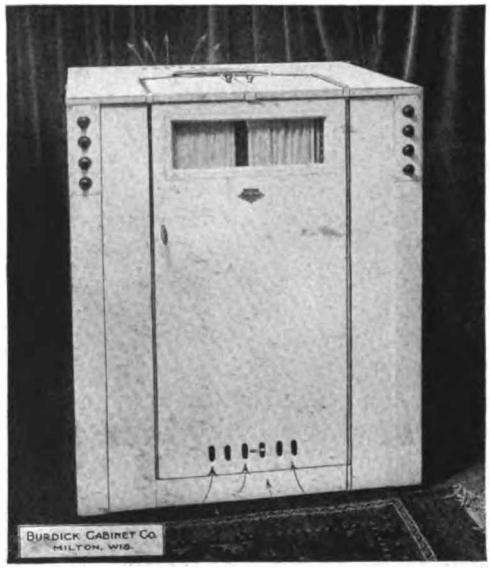


Fig. 161. Showing one of the latest achievements in Electric Light Bath Cabinets. This is made by Burdick Cabinet Co., Milton, Wis. Notis the ventilators bottom and top. This is the style I hav in my offis.*

Figs. 161 and 162 show the exterior and interior of one of the latest achievements in bath cabinets. This bath cabinet is made of specially prepared steel. No wood in it. Enamel baked on.

*There ar several other good makes of electric light bath cabinets, and one of them is shown in Fig. 163. I would caution all buyers of these outfits to see that they ar made so the lamps do not stand out to burn the patient. Another point to look out for is the wiring. Many ar so made that they cannot be easily taken apart. Some ar not past by the National Board of Fire Underwriters. Look wel before buying an electric-light-bath cabinet. They should last a "life time," so be cautious and do not believe what every salesman tels you.

I hav been making a series of experiments with bath cabinets and find that a bath cabinet ventilated and having tungsten lamps arranged as they ar in this cabinet, wil cause a patient to perspire at as low a temperature as 76° F. At blood heat a most profound perspiration can be brot about and in a very few minutes.

My *tecnic* for handling such a bath cabinet is as follows:

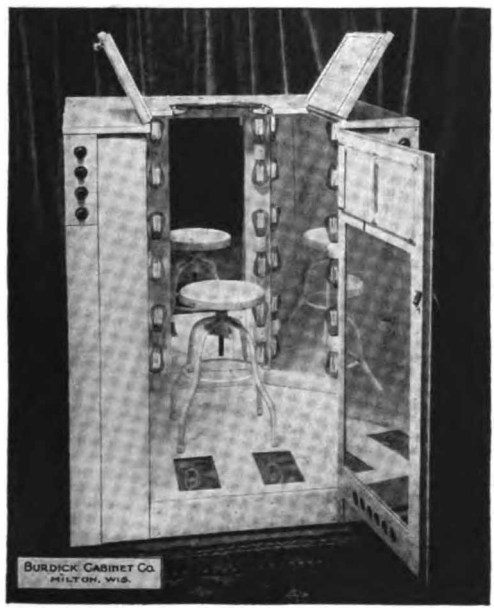


Fig. 162. Showing interior of same cabinet as shown in Fig. 161. Special enameld reflectors ar back of the scientifically placed lamps. I like enamel plates inside better than mirror plates. I believe more heat is radiated from the enamel plates.

I turn on the two middle rows of lamps in the back of the cabinet first so as to hav the cabinet at about 72°F. I then hav the patient enter and arrange a sheet in front of the face so the heat and light from the bath cabinet do not go up to the face. I hav all the ventilators wide open. Within two minutes I turn on two more rows of lights and so on until gradually all the lights in the cabinet ar lighted. My object in doing this is to not *shock* the system. I hav found by actual experimentation that I can produce perspiration

Fig. 163. Type "A" Electric-Light-Bath Cabinet manufactured by the Sanitarium Equipment Co., Battle Creek, Mich.

Description: This cabinet is of a size that wil accommodate the largest patients yet on account of the design, it occupies but a few feet of floor space.

The back or exterior of the cabinet is made of wood which is specially bilt up for this purpose, being made of five layers of wood, the grain of each layer running in different directions and held together by a special glue. The different pieces ar glued together under a good many tons of pressure thereby making a joint which has proved to be satisfactory under all conditions.

The interior of the cabinet is lined with a beveld French plate mirror, the back of which is the result of long experience in this kind of work and wil not blister under any degree of heat it is possible to produce in the cabinet.

Each half of every one of the fifty lamps is mirrord with the same process used in the other mirrors so as to throw every ray of light directly on the patient.

Because there is no steel used in the construction of the cabinet, there is no possibility of rusting and thereby causing the finish to peel off after the cabinet has been in servis a short time.

The cabinet is constructed in such a manner that any handy man can with five minutes' work take it apart to move thru narrow doorways.

The fact that this cabinet is made by manufacturers of over twenty-five years' experience in this particular line indicates that it has all of the superiorities which can be lernd only after long experience in having cabinets in actual servis for many years.

in this manner in one-quarter the time I can with the old method.

The great advantage of this method is that the patient's pores ar opend in the shortest possible time. Perspiration begins and with it the general elimination thru the skin, and best of all *the patient has no tired, languid feeling after the bath.*

After the bath I dry the body and immediately spray it with alcohol in which has been put a few drops of some essential oil. (See Psycology of Odors in this lecture.)

I then giv whatever other treatment may appear indicated, such as powerful-incandescent-light therapy, oxygen-vapor therapy, magnetic-wave therapy, etc.

Reflex of the Skin

Did you ever notis what takes place when you step into a room a good deal colder than your body temperature?

Did you ever notis what takes place when you step into a room with a temperature much higher than the body temperature?

If you hav not, do so the next time you hav an opportunity, especially when naked.

The first thing that happens is a reflex contraction of the pores of the skin. This is nature's method of warding off a sudden shock. It requires about ten minutes for such skin to become relaxt. By having the temperature changed gradually, no such powerful reflex takes place. That is the secret of giving electric-light baths with the temperature raisd gradually.

Electric Warming Pads

For giving dark heat the hot water bottle, hot stones, or hot bricks wer formerly used. Then came the hot water bag. These hav now been supplanted by the electric warming pad which is one of our best methods for giving localized heat without light radiation.

As there ar so many kinds of these electric warming pads, some of which ar very unsafe to use, I thot it would be of interest to my readers to know of one that so far as I can ascertain is bilt on a principle of safety and regulation far in advance of any of its competitors. This pad is known as the "Safety" electric warming pad. It is manufactured

by the Scientific Products Co. of Steubenville, Ohio. This pad has an automatic cut-out so that it would be impossible for a person's clothing to take fire from it, if any of the wiring should go wrong. Another feature of this "safety" electric warming pad is the heat control which is arranged on an entirely different principle than any other. The heating capacity can be regulated from ordinary room temperature to about 180°F. Another advantage of this "Safety" pad is the *garantee* of its internal heating device, upon which there is no time limit. If anything goes wrong with it, they agree to fix it free of charge.

PSYCOLOGY OF ODORS

I hav mentiond the fact that I put a few drops of essential oils in the alcohol with which I spray off the body after an electric-light bath. The spraying apparatus I use is the eight-ounce bottle spraying device made for me by the DeVilbiss Mfg. Co. of Toledo, Ohio. It is really their No. 58 atomer fitted to an eight-ounce bottle. The comprest air apparatus I use is that manufactured by C. M. Sorenson Co., Inc., New York City. (Figs. 150, 151 and 152.)

I first ascertain what odor the patient particularly likes. Many times the color of the clothing a lady wears and her general style wil indicate the odor she likes best. Elderly people, as a rule, like odors of old-fashiond garden flowers or herbs. When I hav decided what odor wil be most plesant to the patient, I put a few drops of the oil giving that odor in about four ounces of alcohol and spray the body with it.

There is something about the psycology of an odor that is farther reaching than one at first realizes. Did it ever occur to you that any incident that happend in your childhood that carried with it certain odors wil always be brot to mind when you smeld that particular odor again? The psycology of odor is really more definit than that of sight or sound, and in fact more than any of the other senses.

You may forget what you hav seen, herd, felt, or tasted; but you NEVER *forget a distinctiv odor, especially if that odor is connected with some incident in your life.*

In giving any form of treatment, it is wel for the physician to study the patient from all angles, and the better those patients ar pleasd with the treatment, so much better is the treatment for them and so much better is it for the physician.

As an example of this, I wil cite a few examples:

A lady about 70 years of age, came into my offis for treatment. I decided to giv her an electric-light bath, and scented the spray with oil of fennel. As soon as she detected the odor she made this remark, "Doctor, how did you know the odor that I most like? That takes me right back to my old home."

In a few days another lady came in, saying she wanted a treatment similar to the one I gave the lady abov mentiond, as she had been so enthusiastic about it. I used a spray of oil of anise for this lady and she was delighted with the treatment.

For another lady about thirty years of age, who bore the air of a traveler, I used oil of cassia and one drop of oil of sandal wood. She remarkt that it reminded her of oriental places, and she was delighted that I knew what odor she liked best.

If you ar not sure what odor to use, ask your patient what odor they like best. You wil notis that the spray is not strong or lasting but it is pleasant while it is used.

Many hav askt what oils I carried and for their benefit I wil mention what I keep in stock. From these oils almost any odor can be made by making combinations, and it takes only a little practis to know how to do it.

Oil Anise
Oil Balsam of Perû
Oil Bay Leaf
Oil Bergamot
Oil Cajeput
Oil Camfor
Oil Caraway
Oil Cassia
Oil Cedar wood
Oil Citronella
Oil Clove buds
Oil Coriander
Oil Cubebs
Oil Eucalyptus
Oil Fennel seed
Oil Geranium
Oil Juniper berries
Oil Lavender
Oil Lemon
Oil Orange
Oil Patchouly
Oil Pennyroyal
Oil Peppermint
Oil Pimento
Oil Pine Needles
Oil Sandal wood
Oil Sassafras
Oil Spearmint
Oil Thuja

HELIOTHERAPY

(Sunlight Treatment)

"Sunlight constitutes a truly celestial materia medica, far safer and more potent and enduring than any cruder elements, provided we know how to deal with it. Minerals ar at the lowest end of Nature's scale of forces, and ar so crude that their particles cannot float in the atmosfere; consequently they ar held down in the bosom of the erth. The vegetable world, which contains all forms of nourishment necessary for the human body, is devoid of the coarser mineral elements, which ar sifted out by a beautiful and most ingenious process in Nature's perfect laboratory. Carbon and some other finer elements of sunlight and atmosfere ar receivd into plants from the skv, while erthly elements ar deprived of their coarser ingredients by the spongioles of the root, and absorbd only in the liquid state.

"The finest potency of all of which we can avail ourselvs in the external world comes from the sunlight, the only known element which transcends it in fineness being the *psyco-magnetic radiation* from highly organized human beings."—Babbitt.

A whole volume could be written upon Heliotherapy or the treatment of disease by means of sunlight.

Heliotherapy is such a potent factor in treating mental as wel as fysical ailments that every physician should prescribe it as much as circumstances and environments wil permit.

We ar all aware of the great work done with Heliotherapy at high altitudes in the treatment of bone tuberculosis, but very little is said about treating other diseases by means of this great natural agency. Many persons could be cured of their ailments if they could get out of the smoke-laden cities and receive the benefit of sunlight and pure, fresh air. The average patient cannot go to the mountains for such treatment, but for those who can and hav proper care, no doubt sunlight wil do much for their general condition. In all conditions where there is anemia, such as in tuberculosis, sunlight is the most potent and beneficial agency.

To get the good effects of sunlight, a person must strip at least to the waist and gradually accustom himself to the action of the direct rays of light. I hav sent many patients to the surrounding country where they can liv in this manner.

Tecnic

The tecnic is to hav the patient commence exposing the front and the back of the body about three minutes morning and afternoon, and increase this about one minute daily until they can be out at least two or three hours a day in the sunlight. The only protection they need hav is a hat for protecting the hed and eyes, and trousers or skirt. I hav seen so-cald hopeless cases recover after spending six to twelv months in this out-of-doors method of living.

For *bone tuberculosis*, the tecnic is a little different, as the sunlight is then allowd to radiate upon the affected parts, starting with two or three minutes at the first séance and increasing it two times a day about a minute at each séance until the body becomes accustomd to the effect of the sun rays.

Caution in Giving Heliotherapy

Care must be used not to overdo the matter or let the patient remain in the sunlight until they feel weak or exhausted. By increasing the time very gradually, as abov outlined, no il effects can arise from this method of treatment, care of course being exercized to depend upon climate and wether conditions. In many parts of the country Heliotherapy cannot be carried out in the open.

A *Solarium* to be practical should be located in a part of the country where there is more sunlight than cloudiness. Altitude has a great deal to do with the potent effects of sunlight. It is surprising how much cold a person can stand on the naked body if at a high altitude and in the sunlight.

While these remarks on Heliotherapy ar very meager, yet they may interest someone to inquire further into the work. It is a subject that has special bearings upon special locations and is therefore not as generally applicable as the artificial means of giving light.

(See lecture on Quartz Light in this Part Two.)

CHROMO-THERAPEUTICS
(Radiant Color Treatments)

As before mentiond, Chromo-Therapy should not be confused with Foto-Therapy or with Bio-Dynamo-Chromatic Therapy.

Chromo-Therapy has been used for ages in treating disease. Whether it wer used empirically or not, the fact remains that different colors wer either painted upon the skin, upon which the sun radiated; or some other method was used for giving color emanations to the body.

As previously stated, may it not be that the skin has the property of selecting from the spectrum such colors as it needs, either normally or when an abnormal process is going on in the body?

We know that the blood selects oxygen from the air which we inhale because it has an inherent affinity for it. Is it not rational to believe that the tissues change light emanations to meet their special requirements?

I believe the tissues do select from the ful spectrum such colors as ar in harmony with the body as a whole.

I also believe that where there is any lesion or abnormal process going on in the body there is an affinity at that location for a certain rate and mode of motion which it seems perfectly natural should be selected from light.

Chromo-Therapy has been used under the name of Chromopathy, and that term has wide inclusivness for it practically covers all fases of treatment into which the employment of colors enter. *Chromo-Therapy,* however, seems to be the better term as at the present time there ar so many "pathies" "on the market."

Probably Dr. Edwin D. Babbitt, an American physician of a past generation, in his monumental volume entitled, "The Principles of Light and Color," brot out more

sound facts regarding Chromo-Therapy than any other person has ever done. He was a pioneer in his line of practis.*

The Theory of Color

It is not necessary here to elaborate upon the various theories of light and color. It would be too tecnical and laborious for the reader, especially a busy practitioner. The theory taut in our universities at the present time is that various colors ar causd by the length of "waves," the shortest waves of the solar spectrum being visible violet and the longest the visible red. According to Sir Isaac Newton, between these ar the indigo, blue, green, yellow, and orange.

From my study of color, I believe this is a very crude explanation of color. In the first place, the solar spectrum contains only seven of the multitude of colors that we ar familiar with, to say nothing about the colors that we ar not familiar with. There ar infinit numbers of tones that we cannot hear, so there must be infinit numbers of colors that we cannot perceive. The infra-red we know something about and the ultra-violet—rays that ar invisible to the eye, but which can be demonstrated by various instruments. Then there ar the "odic colors," or the "psyco-magnetic" colors, which I *know* exist. (*See Part Ten.*)

According to Page (see discussion at beginning of Part Two) all color is simply a variation of velocity of energy, cald light. After thoroly studying the various theories of light and color, I must say that I think the work of Calvin S. Page stands out as the most practical and having the least flaws of any.†

It is not the province of this book to work for or against the "orthodox" theory of light and color, but the following may be of interest. I askt a wel known professor in one of our large universities why they did not teach the "Page theory" of light and color rather than that which is now in vogue. He said that while he believd the reasonings of Prof. Page wer sound and logical and stood the acid test better than any other theory, yet because we hav been over

*Dr. Babbitt's book is out of print, so it is almost impossible to procure it, but anyone interested can obtain a synopsis of Dr. Babbitt's work, entitled "Light and Color," by W. J. Colvjlle, publisht by the Macoy Publishing and Masonic Supply Company, 45-49 John street, New York City.

†See "The New Philosophy" or "Science of Physical Phenomena," by Calvin S. Page, publisht by The Science Publishing Company, 24 West Ontario street, Chicago.

one hundred years getting out apparatus to "fit" one theory it would be like "turning caos into cosmos" to recognize the "Page theory" *now*. He said that doubtless in time the "Page theory" would be recognized as fundamental, but that it was too revolutionary to be accepted at present.

This is like the poor woman who was taken from a wretched hut to a cottage. She said she had livd so long in the "homey hut" that she was "upset" by the change and wanted to go back to her hut, which was *home* to her.

This brings to my mind a quotation from a great filosofer who said, "Let us not place too great importance to great names, but let us investigate in an unbiast manner all facts that lie open to our examination. Facts, not names, ar the only foundation for scientific structures."

No matter what theory one may accept, we know that a certain rate and mode of motion indicates one color, and another rate and mode of motion another. Whether these vibrations be perpendicular to or parallel with the lines of force matters not.

Color Fenomena and Theories

The theory known as the "Brewster Theory" has probably been recognized longer than any other theory. According to his theory, the primary colors ar red, yellow and blue; the secondary colors orange, green and purple; and the tertiary colors russet, slate, and citrene.

According to the Brewster theory, a green color is such because it is supposed to be made up of yellow and blue. The fact that both blue and yellow contain green shows this theory to be incorrect.

The old theory of "primary" colors was that they could not be subdivided, or that they wer in the "visible solar spectrum."

Another reason for red, yellow, and blue being cald primary colors is probably from the fact that a painter by using the red, yellow and blue is able to produce all color effects.

According to the Brewster theory, the secondary colors, orange, green and violet, ar cald secondary because by a combination of two of the so-cald primary colors, one of the secondary colors can be produced. For example red and yellow produce orange; yellow and blue, green; red and blue, violet or purple.

The triad of tertiary colors is made by combining two of the secondary colors—green and violet producing slate; green and orange producing citrene; and the orange and violet producing russet.

From my "polarity" scheme, as illustrated in the chromatic curv, Fig. 29, red, yellow and blue ar very convenient, as primary colors; as red is an exciting color, blue is cool and soothing, while yellow is the medium color or the center of luminosity—"the peak of the pyramid."

One often speaks of Tints, Shades and Hues indiscriminately. This is not correct, as a *Tint* is a color diluted with white; a *Shade* is a color mixt with black; a *Hue* is a compound color, *i.e.*, two or more colors, other than white or black, mixt. A Hue may hav black or white added to change its *Tone*.

Complementary Colors

Any two colors which, when mixt together, wil produce white ar said to be complementary one to the other. For example, red and bluish-green; orange and greenish-blue; yellow and blue; greenish-yellow and violet; green and purple.

Another way of defining complementary colors is that a complementary color is the color a normal eye wil see when closed, after having stared at a given color (radiant color preferd). For example, if a person stares at red they wil see a greenish-blue when closing their eyes. If they stare at orange, they wil see a deep blue; if at yellow, a color between blue and violet, depending upon the shade of yellow. If they stare at greenish-yellow, they wil see a purple; and if at green, they wil see a magenta. If they reverse these colors and stare at greenish-blue, they wil see red; and so on.

The reason for this fenomenon seems to be that certain of the rods and cones in the retina, which ar in tune with the color that is stared at, become fatigued and call up a sympathetic action of the nervs not acted upon. This sympathetic reaction is best seen when closing the eyes or when staring at a black or white surface after having stared at the given color. When trying this experiment, one must be particular to not change the focus of the eyes when closing them. The complementary or negativ color image wil show in from ten to sixty seconds, depending upon the radiance and the individual.

Color Nomenclature

I hav all the standard books on color that I can find and as I look thru them, I am imprest with the "anarchy of colors." One author givs one nomenclature and another a different one. In looking over one nomenclature, I find some of these names—milky-white, bluish-white, pearl-white, water-white, blue-being-born, blue-dying, mignon-blue, celestial-blue or sky-blue, azure or ultra-marine-blue, complete or perfect-blue, fine or queen-blue, covert-blue or turquoise, king-blue, brown-blue or indigo, Persian-blue or woad-flower-leaf, forge or steel-blue, livid-blue, blackish-blue, hellish-blue, black-blue, blue-black or charcoal. In another list of colors ar burnt-onion, fresh-spinach, pink-violet, green-pink, crimson-scarlet. (Some names contradict themselvs.)

Black is said by some to be an "absence of color," which of course, cannot be true as black is composed of equal parts of red, yellow, and blue, while white is composed of five parts of red, three parts of yellow and eight parts of blue. Normal or neutral gray is composed of white and black. Black, therefore, means the *result of all colors* being absorbd while white signifies the *reflection of all colors.*

A Modern Nomenclature

Fig. 164 is an outline of a color chart taken from the work of J. A. H. Hatt, entitled "The Colorist."* It shows the proposed names for hues fifteen degrees apart and the colors opposit each other ar complementary.

From a practical working standpoint, no doubt Hatt's chart is the best. It wil be notist that yellow is markt as a minus color and violet a plus color; that red is a plus color and cyan-blue is a minus color; green is a plus color and magenta a minus color. This "plus and minus system" is used in what is known as the subtractiv and additiv method of combining colors. It is especially useful in modern arts, notably color fotografy and printing or lithografy.

Many hav askt me to define the color magenta, as it is a color that I use a good deal in my Chromatic Screens. According to Hatt, it is the color that comes between crimson and purple. Therefore it can be cald a "red purple." Some call it a "crimson pink."

*The Colorist, by J. A. H. Hatt, publisht by D. Van Nostrand Company, New York City.

According to Hatt, the primary colors ar red, green, and violet; and it is on this basis that I hav bilt up my Chromatic Screens.

"It is probable that what we call a *primary color* is such only in relation to the organ of sight, the eye, and has no such function with light itself independently."

According to the Hatt system "pure green" is the green which is complementary to magenta, and "pure violet" is that color which is complementary to "pure yellow."

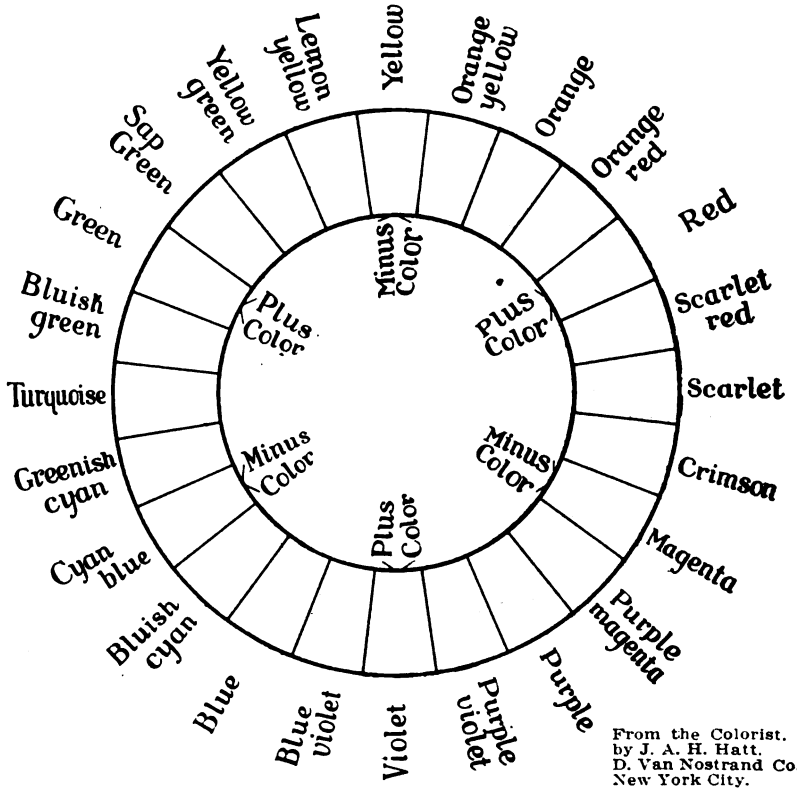


Fig. 164. Showing Hatt's Color Chart and the proposed names for hues 15° apart. Colors opposit each other ar complementary.

From a therapeutic standpoint, we as physicians, ar probably more interested in *radiant colors* than in any other, altho reflected colors, such as those in decorations, ar very important as further explaind in Part Two.

We do not need to discuss color from the viewpoint of an artist, dyer, or professional colorist.

Fig. 29, which represents what I term my Chromatic Curv, shows the positiv and negativ colors as related to polarities, or rates and modes of motion.

It is interesting to see how Dr. Babbitt, whose mind workt in colors, forms, tones and harmonies, illustrates red, yellow, and blue geometrically (Fig. 165). The triangle he compares with red because it is bold and stimulating (negativ electricity). The circle corresponds with blue, which

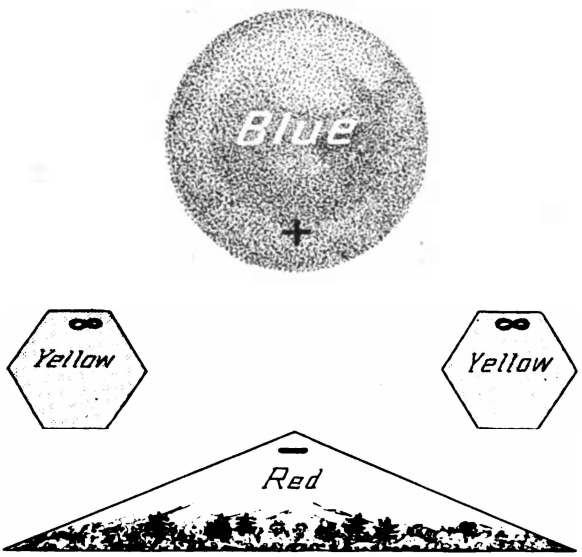


Fig. 165. Colors geometrically shown as depicted by Dr. Babbitt and modified to suit the polarity of colors as shown in my Chromatic Cruv, Fig. 29. The Red or minus color emblematically represents the erth and Blue, the plus or positiv color represents the sky or hevens. Yellow represents the space, or infinity, between the hevens and the erth.

is soothing in its suggestivness (positiv electricity). The hexagon, occupying middle ground, is like yellow, for it produces an intermediary effect, especially when employd as an object of contemplation. This is allegorically shown in Fig. 165.

I can do no better than quote from Babbitt as follows: "The triangle abounds in spirited, hard and crystalline sub-

stances which include the diamond, zinc blend, magnetic-iron ore, topaz, and many others, also various octahedrons and romboidal forms.

"The circle and blue ar beautifully combined in our vision of the sky, and in the infinitude of stars of which the sun of our system is only a minute one when compared with the bewildering immensity of numerous far greater suns which astronomy reveals.

"The hexagon combines spiritedness of angles with regularity of contour; it is found in honeycombs, crystals of quartz, ice, beryl, snow crystals, etc., also in the celular tissues in many vegetable and animal growths."

It seems quite relevant to speak of colors geometrically as nature "geometrizes."

Further commenting on colors, Babbitt says, "The colors of the finer end of the spectrum (violet) ar electric and magnetic in nature and quieting in the effects which they produce, while the colors of the coarser end of the spectrum (red) ar thermal in nature and heating in effect."

Babbitt further says, "There is a trinal series of gradations in the peculiar potencies of colors, the center and climax of electrical action, which 'cools the nervs,' being in *violet;* the climax of electrical action, which is 'soothing to the vascular system' being in *blue;* the climax of luminosity being in *yellow*; and the climax of thermism or heat being in *red.*

"This is not an imaginary division of qualities, but a *real* one, the flame-like red color having a principle of warmth in itself; the blue and violet, a principle of cold and electricity. Thus we hav many styles of chromatic gradation, including progression of hues, of lights and shades, of fineness and coarseness, of electrical power, luminous power, thermal power, etc."

According to Babbitt, the trinity of colors, red, yellow and blue, finds representation in the three great elements of *hydrogen, carbon,* and *oxygen,* which constitute so much of the world, including the whole or a large portion of the sugars, gums, starches, ethers, alcohols, many acids, and much of the substance of the vegetable world.

Colors hav a deeper and broader effect upon all forms of life than is generally known. It has been observd that workmen who hav been compeld to labor in red-lighted rooms, suffer from intense nerv and mental excitement, and

hav a tendency to be quarrelsome. Red shades and draperies hav an irritating effect upon the inmates of a place so decorated. Some nervous people, if kept in red-lighted rooms suffer from delirium and frightful hallucinations, which at once pass away when they ar carried into white light.

The disturbing influence of RED upon an individual is wel illustrated by the following report given me by a foren scientist. He told me that he was cald into consultation by a manufacturer to see if he could detect the cause of inefficiency in a certain department in their works.

He said when he enterd the floor of this department the first thing he notist was the red shades at the windows and that these windows wer on the sunny side of the bilding. He askt the superintendent how long those shades had been there and was told about two months. Upon further inquiry he found that the operators in this department for about six weeks previous had begun to be quarrelsome and had neglected their work. They lost interest in their labor and wer fault-finding and disagreeable in every way imaginable.

He also lernd that before that time nothing unusual was notist in the temperatment of the employees in this deparment.

He advized the removal of the red shades and putting up shades of a yellowish or buf color. This was done and within a few weeks everything in that department went on normally.

This shows how color knowledge can be used to good advantage by efficiency experts.

Recently a mother brot her eleven-year-old dauter to me for diagnosis. She complaind of the ugly temper of the little girl.

Upon inquiry I found the temper or bad disposition began about six months previous and "possesst" the child nearly every afternoon.

Upon further inquiry, I lernd that the peculiar red dress, trimd with green silk, which the child had on, was worn as a "dress-up" garment for afternoons and that the child had had the dress for about six months. I advized the mother to destroy the red dress and dress the child in "tame tones" and to inform me as to the result.

The child's disposition changed at once and has remaind normal. The color of the dress changed the child's temperament.

Colord light seems to exert its influence upon the bare skin as wel as thru the optic nerv. I hav observd that many people, blinded by means of black cloth, could differentiate certain radiant colors that surrounded them when they wer nude.

Colors also produce a far-reaching effect upon the *development* of all forms of life. It has been shown that bacilli, when exposed to the ultra-violet rays ar changed into different species, and the revized or new bacilli, when injected into animals, develop an entirely different disease.

It has also been found that the intense rays from the ultra-violet region of the spectrum, when radiated thru a quartz, mercury-vapor lamp wil coagulate eg albumen and solutions of serum protein.

It is wel known that cameleons, salamanders, newts, lizards, and some species of frogs and toads ar changed in color by reflex irritation thru the eye; and if blinded in one eye, they do not change color on that side of the body.

EFFECT OF COLORS ON INSECTS

In studying the effects of colors, I hav had many experiments made to tabulate the effects of colors on insects, and it is not out of place to mention here the findings.

A scientist has made a series of experiments with colors to ascertain just which colors attract flies and which do not. The following accurate report coincides with what I hav done along these lines, and wil giv you much food for thot.

They constructed several boxes 14″ x 14″ x 12″ and painted them inside with red for one box, yellow for another and blue for the other. Into each box they placed about two inches of decayd matter. The three boxes wer exposed side by side with one side open, so one could observ them carefully. Of the flies counted by a suitable counter 2% enterd the yellow box and almost immediately flew out and enterd the red box. If driven out of the red box they immediately returnd; 26% enterd the blue box and remaind there, while the remainder of the flies counted, 72%, enterd the red box and remaind there during the observation.

After two weeks 500 grams of the contents of the boxes wer examind for maggots and egs. That from the red box was alive with both and too numerous to be conveniently counted. In the material from the yellow box there wer 18 maggots and no egs, indicating that the ovæ wer in the material when originally gatherd. In the substance in the blue box there wer about 250 maggots and less than 900 egs.

From this one would assume that red favors the fecundity of flies and is attractiv to them, blue less so, and yellow not at all.

Again the following experiments wer made.

Several samples of decayd matter, containing housefly larvæ, wer placed in screend boxes, the inside of which wer painted respectivly red, yellow, and blue. The screens wer coverd by a curtain of coarse cheesecloth dyed to correspond with the color of the box interior. Care was taken to prevent the entrance of any light other than the respectiv colord light.

At about normal periods, flies hatcht in the three boxes. These first generation flies wer transferd to boxes of the same color and screening, containing steril decayd matter, and allowd to breed. In this way second generation flies

wer obtaind of three classes corresponding to the boxes in which they wer reard.

Three groups of twelv each of red-bred flies wer placed in three colord boxes of red, yellow and blue, containing steril decayd matter and carefully screend from white light.

The same was done with the flies bred in the yellow and blue boxes. All flies wer taken indiscriminately from their respectiv boxes, no care being exercized as to the selection of sex.

Red-bred flies showd a 90% higher fecundity in red boxes than in yellow, and 89% higher than in blue.

Yellow-bred flies showd 100% higher fecundity in the yellow boxes than in red, and 91% higher than in blue. Not one hatcht in the red box.

Blue-bred flies showd 100% higher fecundity in a blue box than in a red, and 90% higher than in yellow. Not one hatcht in the red box.

From this, we make the following conclusions:

Flies born and bred in colord light and living in colord light, wil hatch naturally at the normal rate of fecundity only in the light to which they ar attuned. A change of light prohibits fecundity altogether or reduces it to a very low degree.

Two farms about a mile apart, with no nearer habitation, had barns and kitchens as follows:

Farm *A* had barn painted the usual iron-ore red both inside and out. The kitchen was painted a fairly bright blue and the dining room red. There wer at least 75% more flies at all times in the red dining-room than in the blue kitchen, even when food was exposed in both rooms.

Farm *B* had barn painted the usual red outside but yellow inside. The kitchen was red and the dining-room yellow. The kitchen containd only a few flies whereas the dining-room swarmd with them.

From these observations, it would appear that the flies born under the influence of a certain color find that color more congenial than any other.

It may be by this provision of nature insects ar able to find their proper food thru color detection. They ar usually hatcht amid color surroundings due to reflected light from plants and leaves or flowers that ar to be their food supply during life.

In two rooms side by side, one decorated in red and the other in yellow and a large door between them wide open, the following observation was made: A dish of stale beer placed on a table in the center of each room was used as bait. The one in the red room was coverd with flies, and many flies wer in the room after windows wer opend. The bait in the yellow room was hardly toucht. Only three flies wer counted on it and no flies in the room. After two hours of watching, the red room containd all the flies and the yellow room had none.

They took two sheets of "tanglefoot" fly paper and put them side by side after coloring one sheet red with anilin dye, while they left the other its original yellowish color. After eight hours the red sheet containd one hundred and eighteen flies while the yellow containd only nine.

I might ad that I painted a large horse stable yellow inside and hardly a fly came into it, while another near by, not thus painted, was swarming with flies. In both stables wer used the same kind of disinfectants. I hav always notist that a black and white cow has more flies on her than a yellow cow. It is popular knowledge that a yellow cow wil "stand the heat" better than a black and white one. It may be the one has less to contend with from insects than the other, but I hav notist the rays from the sun do not affect one the same when wearing yellow clothes as it does when wearing other colors.

A yellow horse screen is hardly ever coverd with flies, while a black or white one is. I hav often observd that cows kept in stables painted yellow gave more milk than those kept in stables of different color. I hav notist that yellow walls never hav as many fly specks on them as walls of other colors.

It has been found that mosquitoes ar attracted by blue but that they ar not attracted by yellow. I hav tried this out in a very simple manner by having persons wear on one foot a blue sock and on the other a yellow. The blue coverd ankle wil be very badly bitten by mosquitoes while the yellow coverd one wil hardly be toucht.

In the woods, insects bother those drest in yellow less than they do those in other colors.

My experiments and observations seem to show that the observations of some scientists hav been wrong. Many say that the only color flies see wel is white. They say they

see yellow fairly wel but hate blue and green. Also that red makes everything appear dark to them and they do not see violet at all.

Probably it was not taken into account or known by these scientists that flies ar attracted to the color in which they ar bred.

Some Arabs treat their houses with a light blue wash and some Japanese hang curtains of blue glass beads and bamboo at the entrance of their baker and butcher shops. Such curtains ar often used in Australia and act as a fly screen, keeping flies out and causing flies that ar in to seek the light.

There is no doubt but that flies ar governd by the surroundings in which they ar bred, and if one studies the conditions under which the Arabian, Japanese and Australian flies ar bred, they might see the reason for their disliking blue.

I think that flies *naturally* hate yellow but no doubt they can be bred so as to seek yellow.

Blue screens make a room more or less dark and probably that is the reason why there ar fewer flies in a blue room than in a light colord room.

Effect of Colors on Butterflies

It has been found that the larvæ of the common white butterfly, which is a colorless insect, wil, if placed in boxes of various colors produce butterflies of the exact shade of the box in which they wer grown within three to five generations. These same metamorfosed butterflies, which might be brown, red, blue or any other color, can by the reverse process of rearing them (that is, in a normal light without color) be brot back to their natural white color within three to five generations.

These findings show how colors apparently affect all life and especially thru the optic mecanism, as wel as thru the protectiv covering.

No doubt colors hav a deep effect upon vegetable life but that is too lengthy a subject to go into here.

Colors Can Produce Somnolence

Recently a church attendant in one of the middle western states made a very peculiar inquiry. He askt if I could

tel why he was always sleepy when he went to a certain church, altho he was never sleepy when he went to any other church. This church had an exceptionally good speaker. In this particular church, he said he had counted as many as fifty asleep at one time, and it was no uncommon thing to see a choir boy fall off his bench. Nearly all the attendants of the church complaind of this somnolence. The sleepy feeling began to affect the individual after he had been in the church for about twenty or twenty-five minutes. Some of the members of the congregation would prick themselvs to keep awake and others would eat biting lozenges. One of the choir boys said that altho he had sung in many choirs, he never was in a church that made him so sleepy as that church did. He said some of the other choir boys said they never felt sleepy in a choir before, but they could not keep awake there.

This church is equipt with the very latest ventilating system and is as perfect in its appointments as modern architects can devize. The whole interior color scheme is yellow. The woodwork is natural quartered oak, the ceilings ar a deep crome, the walls ar yellow, the carpets ar old gold, and the altar is of antique-yellow marble. Every window in the church is ledded with yellow or yellow-orange glass. As one sits facing the pulpit, the light from a yellow-staind-glass window shines in his face. The whole effect is beautiful and mentally stimulating. But there is the trouble. Over-stimulation produces relaxation. Consequently the mental stimulation is too great and the body becomes fatigued, the result being drowsiness and somnolence.

It can be seen from this how important it is that we should all know more about colors and their effects upon the fysical, mental, and spiritual being. The laity, as wel as physicians and architects, should know something of the effect of colors upon the individual. Color surroundings many times hav as much to do with the state of one's helth and happiness as the food they eat or the air they breathe.

An anemic person requires an entirely different color than a plethoric individual.

A flegmatic disposition calls for a color entirely different than a nervous disposition.

Recuperation should be in direct ratio with the need. Therefore we can redily see the immense field that color therapy fils.

It has been known for some time that certain rays o light, the ultra-violet for example,—ar very helpful in curi certain forms of skin disease, but the value of light and col in mental diseases is a field as yet comparativly unexplord

Right here I might giv a synopsis of *harmonic contras* as recorded by Colville.

Harmonic Contrasts

"Colors which contrast harmoniously ar red and gree yellow and purple; blue and orange; red-gray and gree gray; yellow-gray and purple-gray; blue-gray and orang gray; red-purple and yellow-green; red-orange and blu green; yellow-orange and blue-purple; light red-gray ar light green-gray; dark red-gray and dark green-gray; de blue and deep orange.

A stil more exact arrangement of contrasting hues reacht in connection with the seven colors of the solar spe trum.

Red contrasts with green having a slight violet cast.
Yellow contrasts with violet or with bluish-purple.
Orange contrasts with indigo or indigo-blue.
Yellow contrasts with violet or with bluish-purple.
Green contrasts with red having a slight tinge of viol
Blue contrasts with red-orange.
Indigo contrasts with orange.
Violet contrasts with yellow.

Many variations from the abov ar permissible. Bl contrasts wel with light red and with yellow. *Any two co tiguous colors ar inevitably discordant, as ar any two co secutiv notes of the musical scale.* Red necessarily discor with orange; green with blue; and so on thruout the scal unless they blend by a gradation.

The so-cald neutral colors, white, gray, and black o not definitly discord with any, yet they produce effects. Che reul declared that black lowers the tone of all colors ar that white raises it. Gray makes all colors appear mo brilliant *by contrast.* White combines most perfectly wi light blue, then with light red, but not wel with orang Black combines best with red or rose, then with orange, th with yellow, and somewhat imperfectly with light green

Color in architecture is a subject to which Dr. Babb gave much thot and attention. I quote as follows:

"Nature's contrasts do not consist of antagonism or contrariness, but of spirited diversity on the law of unity.

"How would a white house appear with its cornices and trimmings painted jet black? Tho we do not often see any edifis quite so hideous, we do behold the eyesore of white bildings trimd with borderings of so dark a hue as to suggest the idea of perpetual mourning. Such color schemes ar blots on any landscape.

"A house painted in its main body with light yellow-gray (nearly cream color) and trimd around the windows, piazzas and cornices with a darker yellow-gray, sufficiently contrasted to be very distinct without violence, presents a truly harmonic contrast; the principle of unity being the yellow-gray which binds both colors in a brotherhood, while the principle of *diversity* is the difference of light and shade.

"Another style of harmonic contrast is illustrated by trimming a yellow-gray house with purple-gray of equal depth of shade, modestly applied. In this case the principle of unity consists in their both being of the same tone of gray and the same depth of hue, while the diversity consists in difference of effect between the yellow and purple, each of which brings out the purity of the other *by contrast.*

"Soft hues of red-gray ar exceedingly pleasing when a house is surrounded with foliage. So ar different tints of green-gray if the green is not over-prominent from its analogical harmony with the foliage."

The interior decoration of houses is of more vital importance than that of the exterior. Colville says, "Children very erly in life become strongly influenst by the colors with which they ar perpetually surrounded in their homes. Whenever means permit, the walls of all frequently used rooms should be painted by true artists. Natural scenery should be depicted; historical events of a wel-selected caracter may also be portrayd, but no scene must be presented of any sort which wil suggest to a susceptible mind any situation, or course of action, which it would not be desirable to hav reproduced in the actual lives of those who contemplate the painting.

No battle scenes should ever be allowd to disfigure the walls of any home or scool, and it would be indeed conducciv to the spred of more civilized and peaceful sentiments than yet pervade the majority of communities, wer represen-

tations of strife excluded from public art galleries and all places frequented by the general populace.

(More is said regarding interior decorations in a subsequent lecture.)

Color in Dress

I quote again from Colville: "The harmonic use of colors in dress is a topic of special interest and value, because the colors we constantly carry about with us in raiment exert a far greater influence upon ourselvs and others than is generally supposed.

"There cannot properly be any permanently binding rule of fashion in colors, because all tints and hues can be profitably employd at all times for the clothing of the widely varied members of any large community. No arbitrary rules can be laid down because individual tastes, preferences and requirements can never rightly be disregarded, except in cases where taste has become abnormal thru some kind of mental perversion and therefore needs judicious *counteractiv* treatment.

"We all know from observation that blond persons appear wel in light colors and that brunets look wel in darker hues, and that persons of a rubicund countenance can always wear subdued red tints to good advantage. Pale faces appear less pale when greenish tints ar worn, but purple is apt to enhance the bilious appearance of a face in which a yellow tint is prominent. A red ribbon worn near the face has a tendency to modify the redness of a too rubicund complexion.

"Contrasts which ar extreme invariably produce theatrical effects which ar not usually pleasing in private life, tho sometimes needed on the stage. Really good taste is generally displayd when we adorn our persons with the grays of bright colors, not when we blaze forth in the ful splendor of primaries or prismatics. There ar, however, occasional exceptions to this general rule when it is quite legitimate, and not at all out of good taste, to produce extremely prominent effects. An over-supply of dark elements in colors worn on the person degrades light into heat, thereby obstructing its finest chemical action on the body."

Babbitt says, "Nature's great Law of Harmony is the equilibrium of the principles of Unity and Diversity, exemplifying the universal rule of liberty combined with law; of

centrifugal balanst by centripetal force; of individual effort working with fraternal organization; of repulsion and attraction vitalizing and perfecting each other; of impulse and passional propulsion harmonized by the divine law of right and self-control. Nature's unrestricted growth is never discordant. *All beauty and all natural growth exemplify moral and spiritual perfection. All objects which do not do so ar deformd.*

"Truth is the voice of all nature; so-cald works of art which pervert it must prove failures.

"Colors, like musical tones, ar divided into seven distinct notes, and stil more fundamentally into three, consituting the triad of the first, third, and fifth. Forms also present their parallelism.

"*Harmony of colors is now a science.* It should no longer be said that this and that combination of colors is a mere matter of taste. Of course taste must hav something to do with it, as the principles of harmony may not always be correctly applied without it; but certain rules can be laid down which place many points entirely beyond guess-work or caprice of taste.

"*Color Treatment based on fundamental principles discoverable in Nature wil prove immesurably more beneficially effectiv than any method left to private fancy or wholly guided by individual caprice.*"

COLORS AND THEIR INDICATIONS

In *general* terms, red, orange, and yellow ar primary colors, that is, animating, stimulating and warming. Red is especially indicated for the blood; yellow for the nervs; and orange partaking of both the red and yellow—stimulating and animating to both blood and nervs.

Green has a double action, being nerv animating and "blood cooling," that is, sedativ in febril conditions.

Violet, indigo, and blue ar cald electrical colors, that is, cooling, soothing, and antiseptic; blue having a special action upon the blood while violet has a special action upon the nervs. Indigo partakes of the nature of both blue and violet and is soothing to both blood and nervs.

According to Babbitt, remedies that ar antifebril ar soothing, cooling, and anti-inflammatory, and hav blue predominating; while nervines and hart depressants hav much violet.

Red Color

Red light is the warming element of sunlight with a specially stimulating effect upon the blood and to some extent upon the nervs. It is indicated in tuberculosis, paralysis, fysical exhaustion, anemia, and all debilitated conditions.

Red is injurious when there is alredy too much of an inflammatory condition in the system, or where a person is in a feverish, or in an excitable condition generally.

Yellow and Orange Colors

Yellow and orange ar nerv stimulants and ar valuable in constipation, impaird digestion, and many abnormal pelvic conditions peculiar to women. A reddish orange is valuable in cancer and all malignant growths.

Yellow is injurious to an over-excited system.

Green

Green is a quieting color if not too green. The color should hav no suggestion of yellow. True green has a quieting and soothing effect upon the nervs and also upon the body.

Blue and Violet

Blue and violet ar nervines, astringents, refrigerants, febrifuges, and sedativs; soothing to nerv and vascular systems, especially where inflammatory and nervous conditions predominate. They ar indicated in sciatica, hemorrhage, cerebro-spinal conditions, neuralgia, reumatism, general nervousness, etc.

Generalities

In general if a person is working in dark rooms, the contrast of being in yellow or yellow-orange light is very beneficial to him. This is especially true during a rainy season when there is a great deal of cloudiness. A person's system is naturally more or less deprest and therefore treatment by means of yellow-orange is very beneficial. This also applies to the lighting of the home.

On the other hand, if one is out a great deal in the bright sunlight, the contrast of going into a subdued light, such as violet, or blue, is restful.

Generally speaking, a person with red hair or rubicund complexion does not care for high colors such as red, orange, or yellow; but likes green, blue, or violet.

Remember that there ar almost countless shades of these various colors. Therefore one must be particular in picking out for colord shades or screens the silks that ar best adapted for the purpose.

The grade of silk made under the trademark name of Faile-Matinée I hav found to be about right for Chromo-Therapeutic Screens and Shades. This special weave of silk is made in many colors and can be procured thru most of the large drygoods houses.

Silk vs. Glass for Screens or Shades

While colord glass formerly was used for the media thru which light was radiated, I hav found many objections to it. It breaks easily, the proper colors often cannot be had, and it is expensiv and cumbersome.

Silks and linens (and some parchments) of the proper color I hav found to be the best material for shedding light thru. They giv a softness to the light that glass never could giv, especially when using artificial lights back of the screen.

Fig. 166 shows a box that can be used for Chromo-Therapy. It is made for holding several 60-watt incandescent lamps. It can also be made to hold just one powerful lamp. There is no patent on such an arrangement, and the physician can use his own ingenuity for making anything of the kind that he might wish. The frames which hold the silk ar easily constructed, and one part slips over the other, holding the silk in place the same as embroidery rings hold the cloth in place.

By using several different colors, one can make any color they wish. (Fig. 166.)

Such a Chromatic box as this is very practical and can be used for offis treatment and also for treatment at the patient's home.

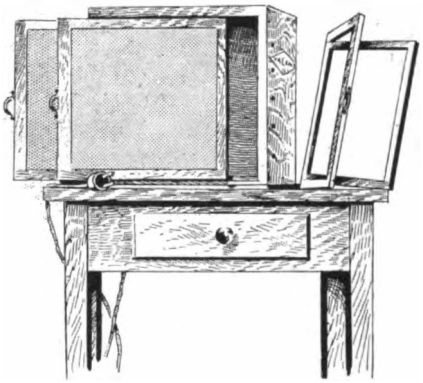


Fig. 166. Chromo-Therapeutic Box. This box can be used for treatments as wel as for testing the radiant color of silks and combinations. The slip frame is shown at the right. A piece of silk 12 inches square can be slipt into it and the frame slid into the box. In the box ar several 60-watt tungsten lamps. The box is asbestos lined and has a bright reflector. Two or more screens can be used at one time to study colors and color combinations.

Another means of producing radiant colors is by means of a wire form such as is shown in Fig. 167, said frame being coverd with silk of the desired color and texture, as shown in Figs. 168, 169, 170 and 171. The large globes here illustrated ar twelv inches in diameter while the smaller ones ar seven inches in diameter. The large ones wil take a 100 to 300-watt lamp, depending upon the density of the silk, and the small ones wil take a 60 to 100-watt lamp.

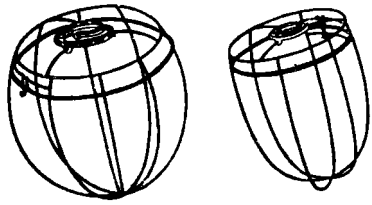
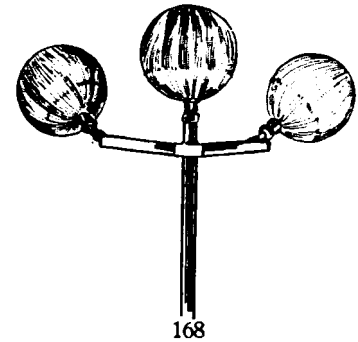
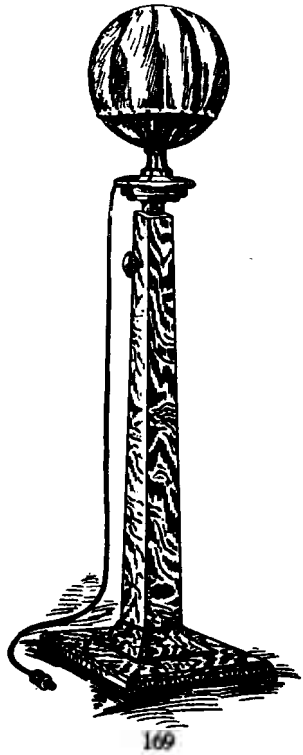


Fig. 167. Wire frames for putting silk over. Notis that the form opens to let the lamp in. These forms wil fit an ordinary lighting fixture.

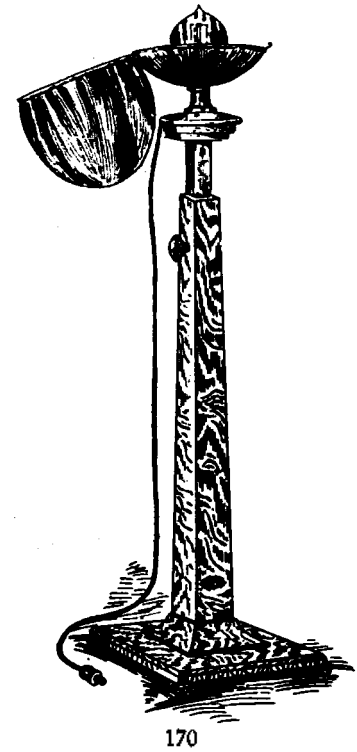


168

Fig. 168. Silk globes. Silk put over wire forms shown in Fig. 167. This illustration shows how three different colord globes can be used on one electrolier.



169



170

Fig. 169. Chromo-Therapeutic Lamp on an adjustable pedestal. This makes a beautiful lamp for a piano lamp or a drawing-room lamp. The globe or shade is a wire form (Fig. 167), coverd with silk.

Fig. 170. The same lamp as shown in Fig. 169, but opend to illustrate its construction.

The small ones can be arranged on a chandelier as shown in Fig. 168, each shade being a different color, as red, blue, and yellow.

The large shades can be used on a pedestal, as shown in Fig. 168, or they can be used in combinations in a very elaborate electrolier, as shown in Fig. 171.

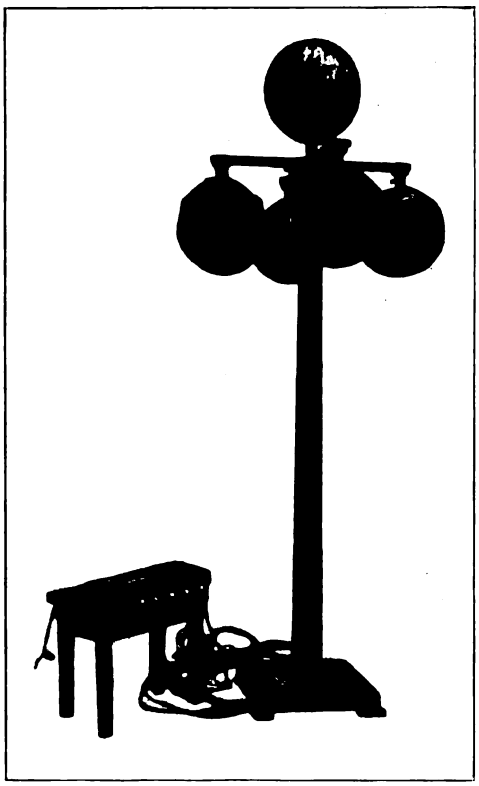


Fig. 171. My elaborate Chromo-Therapeutic Electrolier with an extension key-board. This beautiful lamp outfit can be used in producing "color-music" and the keys can be operated from a score so as to giv the color that the theme of the music calls for.

All these various appliances can be home made. The wire globes ar best solderd together and hinged, as shown in the engravings.

The soft and beautiful effect of passing light thru silk shades made in this manner cannot be adequately described. One must see them.

It wil be notist that these globes ar so made that all parts ar coverd, and the effect is entirely different from the old style silk lamp-shade where only part of the light is screend. Of course a person can use a great deal of originality in constructing these globes. The upper part or the part that is connected to the fixture can be of a different colord silk than the main part of the globe, but if such a combination is used, care must be exercized to test the silks out first to see that the colors blend wel.

THERAPEUTIC ACTION OF COLORS

Sunlight shed thru colord glass was very much in vogu a few years ago for the treatment of disease. Probably th reason for its going "out of fashion" was because it wa not taken up in a scientific manner by the medical professior Another reason probably is that color therapy belongs to th finer forces and commercialism seems to hav stunted th finer natures of so many people that grosser methods suc as drug, serum, and vaccine therapy hav taken the place o the natural finer forces.

I hav often askt physicians why they did not do mor with Chromo-Therapy, and the ansers generally hav bee that it was not practical and did not bring in enuf money t make it pay. I should judge, however, that most of thes physicians wer ignorant of the true therapeutic value o colord light. Of course charlatans hav taken up Chrom Therapy the same as they hav taken up drugs, surgery, va cines and serums. In fact the charlatan wil take up anythin that is popular. Quacks hav used Hydro-Therapy, but tha is no reason why any legitimate physician should not pr scribe baths.

It seems as tho the rank and file of the medical pr fession condems any agency that is simple, abov-board, an easily understood. It seems as tho the medical fraternit especially of the "Old Scool," seeks mysterious ways c treating their patients, that is, using vaccines, serums an "prescriptions written in an unknown tung."

That the public has been arousd to the point of breal ing loose from such methods is evidenst by the great numbe of physicians who ar carrying out drugless methods. *A cording to actual statistics, more people today ar bein treated by drugless methods than by the "Old Scool" met ods.*

Chromo-Therapy is so easily handled that any phys cian can redily fit up rooms for this treatment. He can a least giv advice to his patients for carrying it out in thei own homes.

Right here is another point I wish to emfasize. Som physicians hav told me that if they educate their patien too much along the lines of helth, they wil care for then selvs and teach their friends and thereby not need profe sional care. Any physician who reasons along these lin is deserving of defeat and "war bred" the rest of his lif

If a physician cannot be a *true* physician, he should not be a physician at all. *A physician must be altruistic.* That goes with the profession and is included with the name *physician.* It is true "we all hav our rent and taxes to pay," but the physicians who ar true physicians and ar trying to educate the people to live better ar, as a rule, the ones who ar receiving the largest incomes and hav the largest circle of honest friends.

A lawyer who advizes his clients in such a manner that they wil hav to go to law is soon out of business. The public should be educated to pay the physician wel for good, sound, wholesome advice rather than paying for "a box of pils." I mention these facts when speaking of Chromo-Therapy because Chromo-Therapy has been tabood just because of its simplicity.

Remember that disease means lack of harmony in the system. Remember Dr. Babbitt's great axiom, that *"Harmony cannot be brot about until Nature's affinities ar satisfied."*

In color therapy we hav a means of satisfying "Nature's affinities" in a way that is more subtle and far-reaching than drugs or other coarse agencies.

Colville in ecoing Dr. Babbitt's sentiments says "Without claiming everything for any specific mode or sentiment, it is surely reasonable to contend that such beautiful, natural methods as those we hav been describing ar certainly far more commendable than frightful operations never unattended by grave danger, and the disgusting fases of serum and vaccine therapy which stil hold the fort in many supposedly scientific strongholds.

"Light and Color treatment deserv world-wide attention, and unless we wish to prove fanatics, it wel becomes us to employ to the fullest extent possible, all those benignant and agreeable healing agencies which ar freely at the disposal of all humanity, if we wil but devote some serious thot and attention to the practical utilization of Nature's own delightful remedies.

"Altho mental suggestion acts powerfully in unison with all modes of treatment, there ar no valid grounds for denying or even questioning the demonstrable chemical ingredients of light and color.

"Light and Color ar in themselvs highly efficacious healing agents and worthy of the most serious consideration,

and as we ar all living in the beautiful world which, if shor of light and color, wil instantly become a dreary wildernes: and as Nature persistently employs colors in a regularl systematic manner, we ar surely acting in concert with th Universal Mother if we study her actions and appareling and array ourselvs and our belongings in harmony with th great example set by that unfailing Nature which neve deviates from a divinely appointed pathway."

Tecnic and Treatment

The general tecnic for Chromo-Therapy is as follows In the first place hav a medium sized room set apart fo this method of treatment. Hav a clothes rack in it or hook upon which to hang the clothes. Hav plenty of fresh air in i

When the patient enters the room, hav her disrobe er tirely and do various exercizes to keep the body in motio and to stimulate deep breathing. The exercizes can be formu lated according to the condition of the patient. If the patier is very weak and cannot do any more than lie down, let he do that but hav her practis deep breathing while doing sc

Let the room be lighted entirely by the color rays whic ar indicated. By having a chandelier with three or more co ors on, it is easy to change the colors to suit the condition (See Fig. 171.)

Remember that the color to be of any benefit to th patient must come on the bare skin. No gowns or wraps a permissible.

It is often a good plan for the physician to use som other therapeutic agent along with the Chromo-Therapy a his offis once daily and hav the patient take two or thre home treatments with the indicated color.

The room should be comfortably warm—neither hc nor cold.

Duration of treatment about half hour.

MUSIC AS A THERAPEUTIC AGENT

The ancients utilized music not only to drive away ev spirits or to attract others, but as a definit therapeutic me: ure.

The dictionaries tel us that music is a science and ai of rythmic combination of tone, vocal or instrumental, en

bracing melody and harmony for the expression of anything possible by this means, but chiefly anything emotional.

We all know that music is one of the most ancient of the arts. Greek writers often mention the effect of music, and it was often used by them as a therapeutic mesure.

I do not know as the therapeutic possibilities of music hav ever been scientifically analyzed, but I hav often had occasion to notis the beneficial effects of certain strains of music upon an individual, not only upon their mental condition but upon their fysical condition as wel.

Of course there can be no fixt rule for the therapeutic effects of music upon individuals in general, as the part that music plays in therapeutics must be subjectiv. The caracter of a piece that would quiet one individual would stimulate another. One that would produce melancolia in one would revive another. Therefore in using music as a therapeutic agent we must study our patient.

In experimenting with sound waves for many years, I naturally drifted into the construction of mecanical music-producing devices. In studying the effects of different classes of musical instruments upon the organism, I hav notist that the effects of wind instruments and string instruments ar similar, and the music from an organ has a different effect than the music from a piano.

As tones producing music ar only a difference in rate and mode of motion and as the nervous mecanism of all animals is affected more or less by a rate and mode of motion which is in tune with it, the possibilities of music as a therapeutic agency ar limitless.

I hav personally seen the therapeutic effects of music very often. Among the various instruments that I hav workt on is a mecanical piano that goes by an electric motor and is so constructed as to automatically giv the expressions and time as if playd by hand. This piano I hav in a room where patients can hear it. When it is playing certain pieces I hav often had patients say how it quieted them, and when other pieces wer being playd I could see that an opposit effect was produced. I hav had patients come into my offis apparently suffering great pain and when certain strains of music wer playd they would soon say they did not know what had done it but their pain was gone. This has happend so often that it does not seem as tho it wer imagination. Even if it wer, it is a good practis.

In novels we often see it related how the strains of violin would quiet pain-rackt people. This is not an idl dream. There is a foundation for it, and the novelists mu hav felt these emotions and so made them realistic in th novel.

Investigators claim that music has an effect upon th secretory glands, as is evidenst by the effect upon the salivar and lachrymal glands, and upon the secretions of the stoma and intestins. Some attribute this to the *shock* that certai sounds hav upon the nervous mecanism. This might hol true if it wer a sudden, shril sound or what might be properl cald a *noise,* but music that is *in tune* with the individual hav been able to prove has this effect upon the organism.

It is a wel known fact that certain strains of music w make a dog whine while other strains of music wil hav n effect upon him. It is also wel known that music playd wher cows ar being milkt will enhance the flow of milk. Som may say that it is because it absorbs the attention of th animal. Even if this is true, it is good practis just the sam

It is not a question of how it is done but is it done, an if it is, it is good therapy.

If any physician is inclined to ridicule the therapeut effects of music and call it empirical, I would ask him t explain what the practis of drug medicin is. He wil giv drug and guess at their effects from morning til night, and yet redy to ridicule some fysical mesure that is so simple that i mystery is veild in oblivion. As a rule, drug therapy is spe ulativ therapy. Musical therapy cannot possibly be any mor speculativ than drug therapy.

Some anesthetists hav observd the quieting effect c music upon an individual before administering the anestheti

That music as a therapeutic agent is worthy of consi eration and of extended reserch, there is no doubt. It ce tainly cannot harm the patient and is prone to giv ther solace and comfort.

HARMONIC VIBRATIONS AS A RESTORATIV MESURE.

After this great world turmoil is over there wil be thousands of nervous wrecks. We as physicians must look ahed and be prepared for aiding these unfortunate victims in the most modern and natural manner possible.

Harmonic vibrations ar no doubt the greatest restorativ agencies known. Because of the present day method of living and thinking, the finer forces of nature ar often forgotten and coarse, harsh mesures ar used in their sted.

I hav had the privilege of seeing what harmonic vibrations would do toward the restoring of nerv rackt individuals. I think the best plan for this is to hav the convalescing rooms in hospitals or recuperativ stations decorated in such a manner as to impress the occupants with the great out-of-doors. This can be done by having the ceilings of sky blue and the walls tinted in harmony. Springtime flowers and singing birds hav an effect upon a nervous individual that is far ahed of any other therapeutic agency.

To hav the convalescing rooms in our hospitals fitted up in this manner so as to continually keep in the mind of the inmates that they ar in a perpetual springtime, I know is an ideal manner of using the finer forces (harmonic vibrations) as a restorativ mesure.

For several years past I hav been explaining and talking this system to physicians, and I am glad to lern that some of this work is bearing fruit at the present time.

I hav often been askt how I would advize the arrangement of convalescing rooms for cloudy days or in locations where the sun is not so abundant as it might be. This can be arranged by electric lights so that the inmates would hardly know that they wer not out in the open. There is no limit to this vast open field in harmonic vibration.

PART TWO LECTURE IV.

THE IRWIN TRINITY-COLOR SYSTEM

The following ar sub-divisions of the *Trinity Colo System* as formulated by Miss Beatrice Irwin, London, Eng Her system is fully discust in her book entitled, "The Ne Science of Color."* Miss Irwin has found that the color that ar here named act upon the systems given. She ha found that decorations and surroundings of all kinds, of th colors named, hav a very decided action upon the fysica mental, and spiritual being of the individual.

1 THE FYSICAL	2 THE MENTAL	3 THE SPIRITUAL
Sedativ	*Sedativ*	*Sedativ*
Led Gray	Oliv Green	Moonlight Blue
Prune	*Recuperativ*	*Recuperativ*
Terra Cotta	Rose Madder	Orange
Moss Green	Fawn	Flame Rose
Recuperativ	Royal Blue	*Stimulant*
Golden Brown	Emerald Green	Eau de Nil
Turquoise	*Stimulant*	Mauve
Stimulant	Violet	Citron
Vermilion	Chrome	Azure Blue

From my experience in color study, I unhesitatingl say that this *Trinity Color System* of Miss Irwin is i accord with my findings. I hav studied the caracter and ten peraments of persons living in surroundings of certain color to lern the effect of color on humanity as wel as on insect and animals, and my findings coincide with those of Mis Irwin.

Color has a far deeper effect on all living beings tha is commonly known, and it is Miss Irwin's aim to place colc study where it rightly belongs—in the institutions of lern ing and consequently in the home.

Since Beatrice Irwin has made the United States he home, probably many of my readers ar acquainted with he writings and her work. It has been my good fortune to wor

*B. Irwin, *Color Science Centre*, 149 West 57th street, New York Cit Percy Neymann, 123 Hooper street, San Francisco, Calif.

with Miss Irwin, and it was from her suggestion that I began the use of silks in place of gelatin or celluloid in making my Chromatic Screens.

October 11, 1917, the Illuminating Engineers invited Miss Irwin to address them at their Annual Congress in New York City. Since then illuminating specialists hav been very enthusiastic over the advanst work presented by Miss Irwin.

December 21, 1917, The Philadelphia Section of Illuminating Engineers secured Miss Irwin as the principal speaker at the Franklin Institute.

Altho physicians ar not supposed to be Illuminating Engineers, yet I know progressiv physicians want to be illumind on this illuminating subject. It goes to the very root of Chromo-Therapy. By understanding the effects of color vibrations on mind and body, the physician is able to giv invaluable advice to his patients on subjects that bring him into the very soul of the patient's life.

That my readers may know at first hand something of Beatrice Irwin's pioneer work, gleand from her years of study in all parts of the world, I askt her to giv me an essay for this book. It is here given.

THE NEW SCIENCE OF COLOR

By BEATRICE IRWIN, New York City

The aim of "THE NEW SCIENCE OF COLOR" is establish the *scientific, creativ power of color in the hor* in the scools and universities, in public bildings, and in l itself.

My experience, developt along vibratory and vis lines with subjects of all ages and nationalities, has establi a conviction that we can classify definit colors for defi purposes, and that this classification should be based up the *intrinsic vibratory value of the color.*

The difference of reaction by different persons to t same color seems to indicate merely a different degree appreciation, dependent upon the differing degree of dev opment of the color sense in each individual. But this diff ence of appreciation in no way alters the intrinsic vibrat value of the test color and its potentialities. Dr. Wh would say that certain color vibrations suited certain in viduals in direct ratio with that individual's auric rate a mode of motion, and that by cultivation one can tune th vibrations to a set standard.

My theory, synopsized in the colord chart containd my book, *"The New Science of Color,"* is that every co possesses three intrinsic affectiv powers, and that th powers ar determind.

(a) By the intrinsic vibratory values of the color.

(b) By the combination of that color with other hu These three affectiv values I hav named *Sedativ, Recup ativ,* and *Stimulant* (see table abov) because experime supported by instrumental laboratory tests hav proved me that color has always one of these three effects up respiration, and consequently upon our entire organism.

Sedativ Colors induce deeper respiration. They soot and repose us. *Recuperativ Colors* induce a more superfici but more even respiration, and they equalize and refre us. *Stimulant Colors* excite a more rapid or concentrat respiration, and they quicken our activities.

It is the ernest endevor of *Color Science* to establ this "Sedativ, Recuperativ, and Stimulant nomenclature," demonstrating these powers of Color thru scientific deco tion and illumination.

In the past, color has only been accorded an objectiv a esthetic status in our consciousness and expression, but I a

endevoring to free color from this servitude; for if we ar to utilize this glorious fenomenon of nature more fully to our servis, surely we should accord it the dignity of a classification based upon its intrinsic values, and one which wil define its scope and purpose with coherence and balance.

During the past two years I hav been applying the principles of Color Science exclusivly to the demonstration of these claims thru the practical channels of interior decorations and illuminations, because it is thru such universal channels as these that the new truths can establish themselvs by the test of daily use in our homes. We cease to doubt that which conduces to our wel-being, and I hav found that suitable color environments and an organized use of color in illumination gain more converts than libraries of books could possibly do.

Commencing with externals, a discreet use of Color in architecture seems to me very desirable, and I believe that the emfasis that was laid on this point at the beautiful Panama-Pacific International Exposition wil yet bear fruit. Also when the relations that exist between color and form ar more fully understood, we shal be able to use color with more purpose in architecture. (Dr. Edwin Babbitt in his epoc-making work, "The Principles of Light and Color," lays great stress on this.) The temples and palaces of the Orient hav proved to us that the external use of color has a helthful and definit effect in developing the finer side of citizenship. In our western lands the cottage that is coverd with brilliant creepers, and the municipal bilding that glows in the light, ar alike productiv of emulation, reverence, and hospitality. They stir to achievement, and they make us desire to hav, to giv, and to be happy.

Studying the welth of colord stones in the Palace of Mines at the Panama-Pacific Exposition, it occurd to me that America, and abov all California, might be responsible, in the near future for a *new scool of architecture* in which these tresures of nature could be suitably employd; for the inclusion of colord stone appears to be a much more dignified manner of introducing color into architecture than by the super-position of paints and lacquers, which hav the disadvantage of being perishable.

It is a satisfaction to find that Mr. Maybeck and Mr. Irving Gill concurd in my ideas on this point; for both these architects ar bilding significant structures *into* and not out

of the landscape, and in this sense both ar demonstrati the relation of *color to form* in a very fundamental mann

Yet in a more specialized sense, all bildings should h monize with their immediate color surroundings, and shou contrast with their long distance perspectiv. For instance mansion on a wooded hilltop might be bilt in warm, gr sandstone or even in reddish sandstone if the neighbori loam and tree-barks developt those tones; and from the d tance such a bilding would glow in the sunlight and form welcoming goal to the wayfarer.

On passing the threshold, we ar either welcomd repeld; deprest or exhilarated by the color in our hom Why should this important matter be exprest haphazard left in the hands of a decorator whose chief object is to u up his spare materials at the expense of our eyes as wel our pockets, whereas if we study *Color Science* we can sc our own problems.

The first problem that confronts us is the fysiology our bilding, the mold into which we pour our pigments; a here again the *relation of color to form* plays a most i portant part.

The second problem is the satisfying of our own bod and mental needs.

The third, and possibly the hardest point of adjustme because it binds together those preceding, is the judicic use of *color in illumination.*

Color Science endevors to resolv these three difficult by creating *harmonic interiors,* in which, as we move fr room to room, the affectiv and effectiv values of color so evenly balanst, and so scientifically exprest that our o ganism is kept in a vibratory mobility that results in helth body and peace of mind.

It is this essential quality of change that seems lacki in some modern decorativ art. A plant sickens or runs seed if kept persistently in one light and soil; yet human l ings expect to be wel and happy in homes that ar often ded level" of color from attic to cellar. The extreme these conditionss is equally unwholsome, namely, the hou in which you ar greeted by the gushing hostess who "lov color" and leads you thru a scarlet hall to a purple drawi room delirious with futurist chintzes, and on into an oran bedroom cramd with Chinese embroideries.

If only people would study the balanst and graded color scheme of *nature,* they would become aware that color must be mathematically proportiond to form, to shadow, and to the colors with which it is combined. In its *color evolution* the home should express the four seasons just as vitally as the garden or the forest, and if possible some corner or room should be especially fitted up for *color study* by means of lights and textiles.

On general principles, *recuperativ colors* ar most suitable for large circular spaces, halls, and reception rooms. *Sedativ colors* ar preferably for dining and bed rooms where, occasionally, recuperativs may also be used with advantage. *Stimulant colors* ar to be recommended for drawing rooms and public buildings, but seldom for bed rooms.

In the past we hav clast red as a stimulant and blue as a sedativ color; but the New Science of Color specializes and states that red can also be a sedativ or a recuperativ, and blue a stimulant, *according to its intrinsic vibratory value and its combination with other colors.*

It is obvious that we must train our color sense along definit lines before we can define these differences, and that we must study the principles underlying this new use of color before we can master the endless helthful and beautiful combinations that it can yield.

Hitherto we hav been affected by color without knowing why, but the New Science of Color supplies a key to these questions, and one which opens a door to new plesures and new perceptions. The scientific use of color in offises and public bildings is alredy claiming more attention because experiments hav proved beyond a doubt that in the factory and the hospital, color has materially reacted on the efficiency and helth of the inmates.

From these general deductions a more detaild and comprehensiv application of *Color Science* is cald for in public bildings and in business life. If the professional man, the librarian, hotel manager, and theatrical manager could only be brot to realize that color has an affectiv as wel as effectiv purpose, and that besides pleasing our eye it can actually conserv and repair, or by its misapplication waste our nervous energy, they would find themselvs richer on all planes. Correct color environment conduces to effici-

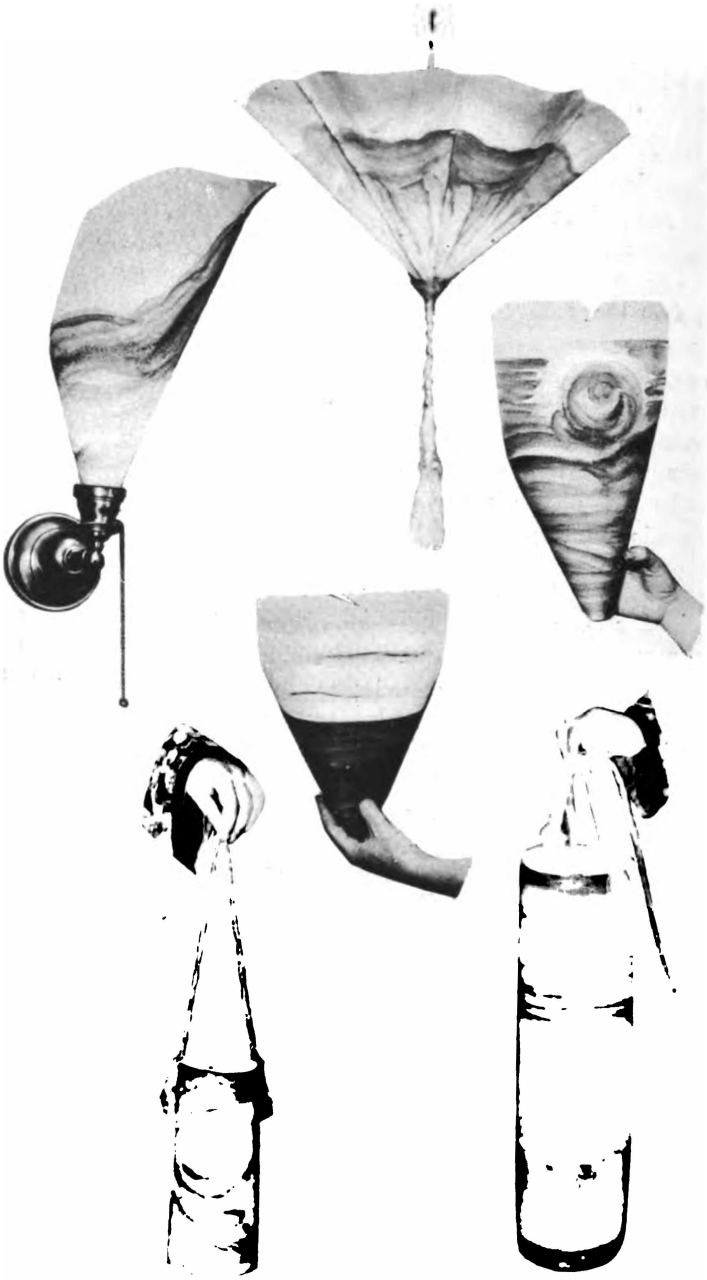


Fig. 172. Six styles of Irwin Color or Light Filters.

ency, to increase of energy, and to the kind of power that makes the welthy and successful man.

I believe that Color Science wil evolv a decorativ art more beautiful than any yet known, for the simple reason that it handles color with fuller knowledge and deeper purpose. It frees color from a negativ position to a positiv eminence in our lives, recognizing it as a *dynamic force,* subject to rythmic laws and correspondences just as much as any other essential fenomenon of nature.

Possibly the highest developments in the decorativ application of *Color Science* wil be along the lines of *color in illumination,* and thru this branch the *Science of Illuminating Engineering* wil expand its activities in various directions, co-operating with Color Science to create "mobil installations" of every desirable hue.

While semi-indirect lighting is on the increase, there is stil in public bildings a painful prevalence of the hard, white "spot-lighting" so injurious to eyes and nervous system alike.

In these days of strain and international crises, surely the care of the eyes cannot be over emfasized, and it is a significant fact that a large percentage of those rejected for the army wer suffering from "eye troubles" possibly due to spot-lighting.

It was a reaction against a single spot-light bracket that gave birth to *"Lumina,"* my first *"Color Filter"* (Fig. 172), a simple device by means of which a direct is changd into a semi-direct light pleasingly tinted to meet individual requirements. This filter or screen proved so practical and comforting that I was led to create a series of *Light Filters* based upon *Color Science* principles, in order to meet a growing need for *hygiene in illumination.*

At this point let us close issues with our third problem, namely, *the scientific use of color in illumination.* I always advize, if possible, two installations, and both of these semi-direct or diffused light. The first, or *Utility Installation,* is possibly a central fixture by means of which we can see to read, write or sew; and this should be delicately but unobtrusivly tinted to heighten or lessen the whole vibratory color values of the room. The aim of this light is to create *luminance,* avoiding glare, but not to focus attention. To force attention is the function of the second or *Color Installation;* and to furnish such specialized color installations I

hav constructed and patented my *Color Filters*, which meet all requirements. These Color Filters ar hand painted by me on specially prepared parchment and with tested pigments, which I combine harmonically to create any color value desired, as indicated by my Color Chart.

In each case the dominant color classifies the filter as a sedativ, a recuperativ, or a stimulant combination. In those filters that call for a fixture, I hav designd the form

Fig. 173. The latest Irwin Color or Light Filter.

of same to correlate with the color that it carries; and in every filter, color is employd in free, flowing lines and harmonic masses that enable the eye to respond more easily to the vibratory values of color, than when it is made subservient to elaborate conventional designs which ar a source of eye strain and consequent nervous fatigue (See Figs. 172 and 173).

In all Filters the *principle of shadow* is definitly exprest either thru color composition or by suppressing illumination in a portion of the filter, thereby rendering that portion of the filter opaque. These proportioned *shadow motifs* relieve the eye of any undue strain which might be causd by the intensity of the colors, as Color Science aims at presenting the most powerful and vibrant combinations available in pigmentary mediums.

So far as experiment has yet gone, the objection to constructing these filters in any other medium than parchment is that *color values* ar neither so strong nor so varied if developt in glass or silk. It is only a few months since these "little messengers" hav been finding their way into the market place, but I am happy to report that in every home that owns one or more they hav been pronounst *"friends."*

Here is a list of my Filters up to date, and their aims ar as follows: (See Figs. 172 and 173).

Semi-Indirect Pendants

"The Comet," Stimulant. Suitable for central lighting 13″ x 21″. Oval.

"The Mandarin," Recuperativ. Suitable for central lighting. Fluted 14″ Circle.

Decorativ Table and Reading Lamps

"Vesta," Recuperativ or Sedativ. Tube 3½″ x 15″.

"Orientale," Sedativ. Tube 3½″ x 14″.

"Nubis," Changeable Night Lamp. Tube 2″ x 9″.

Movable Columnar Lamp

"The Drum," Recuperativ. Tube, 12″ x 36″. (Fig. 173.)

"The Zephyr," Sedativ, Recuperativ, or Stimulant. (Swinging) 4″ x 10″.

"Lumina," Adjustable Wall-Bracket Filter in Sedativ, Recuperativ, or Stimulant, 10″ x 12″.

Their Aims Ar

(1) To rest and conserv the eyes.

(2) Thru the eye to conserv and repair nervous energy

by employing colors which operate activly on the nervous system along chosen lines.

(3) To emfasize the *need* of semi-indirect diffused lighting and the co-relation of light with shadow.

Fig. 174. Beatrice Irwin in her library.

(4) To provide an indirect means of *color education* thru development of the *Color Sense.*

(5) To afford a medium for the scientific and organized co-operation of *color with illumination.*

(6) To create *color motifs* in our homes that hav hygienic as wel as aesthetic value.

(7) To advance the cause of Color Science by establishing its practical claims on our comfort and attention.

It is the ardent hope of Color Science that these Light Filters, like humble yet devoted handmaidens may gradually light a way to broad paths and to a broader vision.

I wish that there wer time and space in this essay to deal with the applications of Color Science to Advertisement, Costume, and the Theater; but each of these subjects needs a volume in itself.

In conclusion, however, let me say that *the scientific use of color* in our homes and in our lives is a work that aims at combining hygiene with beauty for the help and servis of the race.

Beatrice Irwin

QUARTZ LIGHT—ACTINIC RAYS FROM THE QUARTZ, MERCURY-VAPOR LAMPS

Recent Data

Within the past year I hav instald the Quartz, Mercury-Vapor lamps shown in Figs. 177, 178, 182, 183, etc.

So wel pleasd am I with them, that I wanted to tel my readers about them. However, my personal experience was so flattering that I feared you could not believe my reports, so I wanted to hav another experienst foto-therapeutist contribute to this lecture. For that reason I askt T. Howard Plank, M.D., of Chicago, to write an essay with clinical reports, dealing with this most modern and important modality.

I am wel acquainted with Doctor Plank and many of my readers ar also. I hav seen him work and am imprest with his care, honesty, and studious manner. His contribution is very illuminating, and fraut with great possibilities. I wish all my readers, who ar using this modality would send me reports, as I expect to write more on this subject.

It has been scientifically proved that the Actinic Rays from the Quartz, Mercury-Vapor lamps ar therapeutically five times as strong as the Finsen Light in surface action.

It has also been scientifically proved that these same Mercury-Vapor Rays (Quartz Light) hav a deeper action than the Finsen Light.

Every condition that the Finsen Light was good for, the Actinic Rays from the Quartz, Mercury-Vapor lamps ar good for, but to a far greater extent and for a much more general use.

I believe the reason for the fenomenal results that users of the Quartz Light ar obtaining is owing to the fact that actinic rays ar capable of producing ozone (O_3) which is immediately transformd into a lower oxygen (O_2), thereby producing energy that has a very great fysiological importance.

We know that oxygen absorbs actinic rays (ultra-violet rays) and we also know that the radiations from a mercury-vapor lamp ar able to ozonize the air.

It is also known that the albuminous substances of the body as wel as the red blood corpuscles absorb oxygen. In this manner the actinic rays appear to force themselvs into all parts of the body, thereby increasing metabolism and destroying pathological micro-organisms.

One very important fact that I hav observd is that when using the Heræus Alpine lamp, to obtain the quickest and most profound metabolic changes in the body, *the entire nude body must come under its rays*. The effects upon the body seem to be that of "an oxygen bath." (See Fig. 182.)

I was formerly of the opinion that tanning the skin proved that the effects of actinic rays on the body wer to prevent them from entering the body. My former experiences, however, wer not tanning with actinic rays from a quartz, mercury-vapor lamp. The effects from this lamp seem to be entirely different than from actinic rays generated by other means. I am now inclined to believe that the effects of the barrier of a tand skin *depend upon the agency that produces the tanning*.

As previously stated, my definition for pigmentation is a *manifestation of the reaction and accommodation of protoplasm to the action of energy*. According to this definition, which I believe is correct, it can be redily understood that pigmentation (tanning) in reality differs according to the energy which produces the reaction and accommodation of the protoplasm. In other words, *pigmentation differs as the energy which produces it differs*.

Regardless of what my former views hav been regarding the fysiological action of the ful spectrum on the body, I must say that recent clinical observations and reports from careful workers ar impressing me with the fact that I hav a great deal to lern regarding the fysiologic effects of light, especially the type of actinic rays generated by the quartz, mercury-vapor lamps—THE QUARTZ LIGHT.

Following Doctor Plank's essay and clinical reports is much more information that I hav gatherd from very many sources. I hav added very many clinical reports that I hav collected. In closing this lecture on the Quartz Light I hav supplemented much information of value to all users of the Quartz Light and many original as wel as other illustrations depicting the latest tecnic for Quartz Light Therapy.

THE "QUARTZ LIGHT" OR THE ACTINIC RAYS

By Howard Plank, M.D., Chicago

Discussion

The use of actinic rays is both old and new. So long as the erth has been, there hav been actinic rays with their helth giving properties. Those coming from the sun meet many obstacles on their journey to the erth's surface, for dust, smoke or fog ar opaque to them.

Sun baths ar as old as history, but only in recent years has man endevord to get a pure, actinic-ray bath by going abov dust, smoke or clouds and taking his sun bath upon the side of a permanent glacier. The results of such a sun bath wer found to be marvelous. However, only a very few people can go to the glacier resort, so man has tried to perfect an apparatus to take the place of the glacial sun bath, and the nearest approach to it today is the Quartz, Mercury-Vapor lamp.

So far as is known at the present time I believe more actinic rays pass thru fused quartz than thru any other substance. These rays ar very "short," being not over 404 uu., and running down to less than 186 uu., and are invisible to the naked eye. While the quartz lamp supplies the actinic rays in quantity, it givs off but few of the "longer" rays which produce the visible spectrum.

The Quartz Light is the name given to the rays from the Quartz, Mercury-Vapor Lamps.

The exact action of the actinic rays upon the living tissues is not known, but I know that in some way they do improve the nutrition of the body and the immunizing power of the blood stream. They aid in the development of the antibodies and ar therefore antigenic—thus ar bacteria within the system destroyd. This is clinically certain, even tho I cannot explain to you in a scientific way just how these rays penetrate the surface of the body to gain entrance to the blood stream, but that they do, I do not doubt. If you wil use the Quartz Light in treating your cases suffering from acute infections or with cronic constitutional disorders, and wil use it conscientiously and persistently, giving sufficient time for the rays to act and sufficient frequency to obtain a continued effect, I am certain that you wil agree with me that it affords us one of the best, if not *the* best, single method of treatment.

The erly use of *actinic rays* from an artificial source (Finsen Lamp) was limited to the surface of the body, but at the present time we know that *all* tissues ar affected by them (either directly or indirectly), and therefore constitutional disorders may be benefited by their use.

It is taken for granted that one wil not neglect surgical needs, dietetics, sanitation, hydrotherapy, heliotherapy, etc., which, in the "civilized" world, ar today scientific procedures.

The Quartz Light seems both to soothe and to energize, and it is probably that this is due to the effects upon the endothelial cels, leucocytes and blood stream generally, and thru these to all the tissues of the body.

Patients wil often go to sleep while taking their treatments and awaken refresht. My method of giving these treatments in cronic cases is to begin with a one-minute treatment and increase one minute a day until treatments of 10 or 15 minutes ar reacht. This applies to each surface of the body treated.

In treating *cronic cases* one must not look for immediate results, but rather a gradual improvement from week to week; while in *acute cases* one may reasonably expect improvement within a few hours. I sometimes notis good results in a few minutes.

In the main I use the Quartz Light in the treatment of infections; to assist in the destruction of foren growths and for the destruction of epidermis.

Diseases affecting the epidermis ar, therefore, redily relievd and many of them cured in a short time.

This is also true of some diseases that affect the derma and subdermal tissues, thus *nevi* and *lupus* (either erythematosis or vulgaris) ar redily removed. I am also treating such cases as *x-ray burns, telangiectasis, osteomyelitis,* and *spleno-medullary leukemia.*

Some time ago I had a case of *lupus vulgaris* of about the size of a quarter which was practically cured with one twelv-minute treatment with the Quartz Light.

A case of *tinea barbae* of four weeks' standing, which coverd the entire side of the face and neck, spreding beyond the median line, both forward and backward, was practically sterilized in one treatment of 9 minutes with the Quartz Light. The scabs came off the next day and never

returnd. This patient had ten treatments before I dischargd him. No other treatment of any kind was used.

I hav used the rays from the Kromayer lamp with the lamp in contact with the skin for 30 consecutiv minutes, with the reostat turnd on the fourth button, without any destruction of normal tissue below the epidermis. (I use direct current lamps.)

Case 75

In June, 1916, a lady was sent to me for treatment. She appeard to hav advanst carcinoma of the brest and had been so diagnosed by three prominent surgeons of Chicago. The brest was one contracted mass, with the nipple drawn in until it was barely visible. The axillary glands wer badly involvd—one as large as a small hen's eg. She was unable to use the arm on the afflicted side. Within ten days of intense actinic raying from the Quartz Lamp, this patient was able to do her own house work. November, 1917, finds her in the best helth she has had in fifteen years. I cannot believe that this was carcinoma, but I must diagnose it as *cysto-adenoma.* No cutting into the mass for "specimens" was done, so the diagnosis must rest on the result of the treatment.

Case 76

Another case to show why I am so certain that the Quartz Light produces *constitutional* effects:

C. R. Male, age 38. Draftsman. Came to me March 25th, 1917, with a history of periodical attacks of pain in the upper abdomen, lasting for a week or two, covering a period of some nine years. This attack had lasted since the 1st of January, 1917. Pain started about one and one-half hours after eating and was so severe that it required three to six quarts of milk a day and one quart at night to allow him to work and sleep. This was his method of stopping the pain when he came to me. After one treatment of 5 minutes he slept over twelv hours without awakening. No medicin was used. After two treatments with the Quartz Light of 5 and 6 minutes, respectivly, he was able to go one-half day without his milk and without pain. After eight treatments—the longest one of seven minutes duration—he was eating regular meals and sleeping all night, and this without any pain at all. He had fourteen treatments in all between March 25th and May 7th, 1917, when he felt so

wel that he stopt treatment without my consent. October 5th, 1917, he returnd, saying that he had been having pain again for the past two weeks.

I hav been having considerable discussion with various physicians about the advisability of using the 3,000-candle-power lamp in conjunction with the Quartz Light. They hav usually insisted that my results would be as good without the Quartz Light and that my results wer due to the heat and rays given off by the 3,000-candle-power lamp. It occurd to me that this would be a good chance to try this lamp alone, so I gave this patient five, twenty-minute treatments with the 3,000-candle-power lamp and did not use the Quartz Lamp. The only relief he obtaind was for a couple of hours after each treatment. I then gave him a four-minute treatment with the Quartz Lamp, which was followd by about twelv hours relief; the next treatment was of 5 minutes duration and the next 6, after which he had very little, if any, pain. The next treatment was 8 minutes in duration, as wer the following ones, and he has had no more pain. Nuxvomica and Bismuth Sub-nitrate 2 x (Homeopathic) ar the only remedies he has taken. Nothing was said to him of the experiment, so it was not suggestion that relievd him when I again started using the Quartz Light. My diagnosis was *gastric ulcer*.

I am using the Quartz Light for hypertrofied tonsils, enlarged turbinates, and hay fever. In gynecology I am having splendid success and am treating such cases as Neiserrian infections, pelvic inflammations, endometritis, cervical erosions, vaginitis, cervical catarrh, pruritis vulvæ, dysmenorrhea and metrorrhagia. The first treatments given ar of 5 minutes duration, the subsequent ones running up to 10 minutes and ar given thru a vaginal speculum.

I am also using the Quartz Light for prostatitis and vesiculitits. *Tuberculosis* in all forms seems amenable to the Quartz Light. Infected wounds of all kinds yield redily.

Try the Quartz Light on your *neurasthenics* if you want a real surprise.

The uses to which the Quartz Light may be put in the treatment of diseasd conditions ar not known. I am but an infant lerning to crawl. Some day I hope to walk and run. There ar many surprises in store for those of us who ar using the Quartz Light constantly and I can say this to the physician who is but beginning their use—you wil on more

than one occasion doubt your own diagnosis, or else you wil change your prognosis.

Clinical Cases

The following ar a few illustrativ cases treated with the Quartz Light:

Erythema

Case 77

Female—Age 50. Came to me February 14th, 1917, with an eruption covering the anterior and posterior surface of the chest and abdomen, which itcht and burnd with great intensity. It had been running three months when she came to me.

Her first treatment was a 3-minute one with the Quartz Light. Four other treatments, running up to 6 minutes each, wer sufficient to cure this case, and she has been wel for over a year. No other treatment used.

Prostatitis

Case 78

Male—Age 45. Had had an irritable prostate for 20 years, which interferd with his work and sleep. His first treatment was on June 10th, 1917. It was a 4-minute one with the Kromayer lamp, followd by 2-minute massage of the prostate. These treatments wer given thru a small sfincteroscope, the Quartz Light directed upon the anterior wall of the rectum over the prostate. After three treatments his case began to improve, and in less than a month he was scarcely conscious of the fact that he had a prostate.

Hypertrofied Tonsils

Case 79

Dr. P. W. Stewart of Colfax, Iowa, while in my offis in September, 1917, mentiond the fact that his tonsils had been troubling him for the past two years. The left one particularly had interfered with swallowing. To use his expression—"the throat seemd ful."

Examination showd the tonsil protruding between the pillars and this despite the fact that he had had treatmen[t] at various times for the past two years.

I gave him a two-minute treatment with the Kromayer lamp and the next morning the tonsil had receded behind the pillars and he said: "The throat seems open for the first time in two years." (Dr. White saw this case before and after treatment.)

Tuberculous Cervical Glands

Case 80

M. A., Male—Age 23. Had had three operations for tuberculous cervical glands within a year when he came to me on October 16th, 1916. At this time he had fine sinuses running freely and an area of skin tuberculosis surrounding them of about 10 x 15 c.m., which lookt like an x-ray burn at that time. His hed was so drawn to one side from pain and muscle contraction that he had been using three pillows to make himself comfortable while sleeping. His appetite was poor. He had been out of work for eleven months.

I began treatment at once with the Kromayer lamp and the following night he slept on one pillow. Other treatments wer given on the 18th, 20th, 23d, 26th, 30th, and November 3d, at which time he returnd to work. All sinuses had stopt running after the sixth treatment. I saw him in July, 1917, and he had remaind wel and had not lost a day's work.

Streptococcic Infection

Case 81

This man came to me with an infected right index finger, swollen axillary glands, hand and wrist. He was given a 2-minute treatment with the Kromayer lamp and told to report the next day, when a second treatment of 2 minutes was given and the hand was found to be very much improved. A 3-minute treatment the following day of the same length was sufficient to cure this case, and it has remaind cured.

Chancroid

Case 82

R. G. M., Male—Age 25. Came to me on July 2d, 1917, with four penal sores of six weeks' standing. He had been repeatedly cauterized with nitric acid, cromic acid and argentum nitricum, ful strength.

The diagnosis at this time was doubtful because of the repeated cauterizations. However, I gave him a 2-minute treatment with the Kromayer lamp and had him report next day, at which time the sores showd improvement. He was then given another 2-minute treatment and the same on the 5th, at which time the scores wer healing rapidly. Other treatments wer given on the 7th, 9th, 11th, 13th and 14th, when he was discharged with all sores heald.

PULMONARY TUBERCULOSIS

Case 83

S. L., Male—Age 27. Began coffing one year ago. Was at Naperville Sanitarium in November, 1916, and at Winfield Sanatarium during January, February, March and April, 1917. When he came to me August 27, 1917, he was coffing constantly and was unable to work.

He reacted to *A*-Chromatic screen very decidedly and the fysical examination showd involvment of the upper lobe of his right lung.

I started his treatments at once with the Heræus lamp and after the fifth treatment his "tired feeling" improved and his cof was less frequent. After the 10th treatment the sputum was lighter in color—much thinner and it took less effort to raise it. He has resumed work after being idle eleven months

SPINAL TUBERCULOSIS

Case 84

M. R., Female—Age 18. Givs a history of backake of several years' standing. Has been treated by osteopathy for the past year for "spinal curvature." Menstrual history began at 14, but her periods ar 35 days apart. No pain—uses about one pad a day.

Fysical examination elicits tenderness along the spine in left lumbar region and inspection shows a decided swelling at this point. She is also very sensitiv to deep pressure to the left of the median line, in front, opposit the umbilicus; urinary analysis negativ.

Heræus and 3,000-candle-power lamp treatments wer begun August 28, 1917, and improvement was observd within a week.

Diagnosis of tuberculous spine was made by B-D-C method, as she reacted to *A*-Chromatic screen and no other.

INFECTION

Case 85

Dr. E. L. Mason of Eau Claire, Wisconsin, came to my offis one evening in September, 1917, with an infection over the left thenar eminence, which he said was throbbing. The pain extended nearly up to the elbow and he requested that I put on a wet dressing. I said I thot I had something better and used the Kromayer lamp over the infected area for 2½ minutes *in contact*, after which he could move the thum without pain and the following morning there was neither pain nor soreness. No other application of any kind was used—no dressings applied. He has remaind cured.

TUBERCULOUS PERIOSTITIS

Case 86

C. E., Female—Age 14. Came to my offis August 6, 1917, with the following history:

Two years ago she notist a lump on her left elbow, but nothing was done for it until November, 1916, when a prominent doctor of Chicago (by the use of "T. B. tests") pronounst it tuberculosis of elbow and put the arm in a plaster cast, with instructions to keep it there for a year. When she came to me the elbow was badly swollen and edematous, fixt at about a right angle and very sensitiv to touch. X-ray pictures showd involvment of radius, ulna and humerus.

I began treatment at once with the 3,000-candle-power and Heræus lamps and after the fifth treatment she was able to dispense with the cast and after ten treatments she dispenst with the sling.

She is daily gaining in extension. There is no pain or soreness and her general helth is greatly improved. The treatments hav been from 2 to 10 minutes with the Heræus and 15 with the 3,000-candle-power lamp—daily at first, then twice weekly.

LYMFANGITIS

Case 87

A. A., Male—Age 35. Restaurant chef. Skind his right shin on an oven door on July 30, 1917. August 1, 1917, he came to my offis at noon with his right leg swollen and edema-

tous to the nee. Two red streaks an inch wide extended upward to the groin. Inguinal glands swollen. He was chilly and his temperature was 103, puls 120; his eyes hevy.

I gave him a 20-minute treatment with the 3,000-candle-power lamp and 5 minutes with the Quartz Light and sent him back to oversee his department, telling him to report to me at 6 p. m. same day, which he did. His general condition had slightly improved. Repeated the treatment, with instructions to return at 10 a. m. the next day, at which time he was feeling much better, so much so that he was able to oversee his department all day and returnd at 6 p. m. (30 hours after the first treatment) without limping when he walkt and without pain or soreness except about the abraded skin, which was stil swollen. The red streaks had disappeard and tho stil enlarged, the inguinal glands wer not sore to the touch.

On July 6, 1917,—six days after the first treatment—all evidence of his lymfangitis had disappeard, except the abraded skin, which took a few days longer to heal.

All the time he lost from his work was while taking his treatments.

Epithelioma

Case 88

Mrs. J. A.—Age 61. Came to me on February 7, 1917. In December, 1916, she notist a small pimple on the side of her nose, which grew rapidly. On January 25, she was operated on at the Lakeside Hospital, Chicago, and a portion removed, which proved to be epithelioma. Following this "operation" it of course spred rapidly, so that when she came to me on February 7, it was considerably larger than a quarter, covering the whole side of the nose and up on the bridge. At this time I gave her a 2-minute treatment with the Kromayer lamp. On the 8th, she was given a 3-minute treatment and on the 9th, a 4-minute treatment; on the 10th, a 5-minute and on the 12th, a 6-minute treatment. From this time on the nose began to heal, so that by March 5, it was practically wel. When last treatment was given—April 2d—there was no sign of the growth, nor of any extension. This case was seen the latter part of May, 1917, and had remaind wel.

Sinus Infection

Case 89

R. C., Male—Age 30. Gave the following history when he came to me on July 6, 1917:

Four years ago he began to hav a dul pain in supraorbital region, which came on periodically, lasting from a half hour to a week, but for the past year it has been almost constant, with at times a greenish-yellow discharge from the nose. He had taken treatment from a number of physicians, with but little relief.

I gave him a 40-minute treatment with the 3,000-candle-power lamp and a 5-minute treatment with the Heræus lamp on July 6, with complete relief from pain before he left the offis. The following day there was very little soreness and no pain. The treatment was duplicated, with complete relief of all symptoms. Other treatments wer on July 9, 11, and 12. August 27, 1917, he reported that he had had no return of the trouble.

Cervical Carcinoma

Case 90

R. B.—Age 41. Physician. During January and February 1916, she had an opaque leukorrhea, which did not contain visible blood, but after her March period the flow was bloody and more or less continuous. There was no pain. In April she discoverd a cauliflower-like growth in the vagina, which bled when toucht. May 10, 1916, she was curetted and cauterized with a Percy Cautery at Hahnemann Hospital, Chicago. Laboratory diagnosis was *carcinoma.* The same treatment was carried out at the same hospital on June 14, 1916, and the specimen examind by Dr. Wilson was pronounst carcinoma.

June 28, she came to my offis, at which time I began using the Quartz Light, using a Kromayer lamp. The first treatment was 5 minutes, the light being thrown into the vagina thru a vaginal speculum. At this time there was a great deal of odor. June 30, I gave a second treatment, at which time there was but little odor, and on July 3, there was none. She had three treatments a week until Sept. 1, 1916. Treatments varied in time from 5 to 12 minutes.

On September 27, 1916, I did a panhysterectomy and the following is the report of our Pathologist—Dr. W. H. Wilson:

"There is some hyperemia of the endometrium and the glands ar slightly cystic. There is no evidence of carcinoma."

Sept. 1, 1917, she returnd to practis of medicin and is enjoying the best of helth, with no sign of a return of the disease.

Pruritus Vulvae

Case 91

G. A. Age 35. Had a pruritus vulvae of two years standing, which had grown rapidly worse during the past six months. Slight abrasions of skin visible over pubes and labia from scratching.

A 90-second treatment gave one night's complete relief. A second treatment of 2 minutes gave some relief, while the third treatment of 4 minutes, tho it blisterd badly, gave almost complete relief of the itching. A Kromayer lamp was used in this case.

Slight itching has returnd at times, but a mild, non-blistering raying has redily controld it. No other treatment internally or externally has been used.

Gastric Ulcer

Case 92

B. C., Female—Age 31. Stomac trouble began ten years ago, at which time she had an exploratory operation at Rochester, Minn., which reveald nothing and the abdomen was closed without further operativ interference. Five years ago she had an operation for appendicitis.

She came to me February 15, 1917, with the history that she had been more or less il for the past three years (stomac trouble practically all the time). She returnd to me July 3. I had an x-ray examination (both fluoroscopic and plate) by Dr. Maxmillan Hubeny of 29 Washington street, which showd a filling defect at the pyloric end of the stomac (greater curvature) of about three inches in extent.

The x-ray made clear the diagnosis of gastric ulcer and possibly of carcinoma grafted upon the site of the old ulceration.

I began Quartz Light treatments July 5, 1917, and within one week she improved and has continued to do so, gaining two pounds the second week and fourteen pounds in all.

The treatments wer started at one minute and increast one minute each day until 15 minutes wer given. At the end of two months, she said "I hav not felt so wel in years. I can't find enuf work to do."

These cases show unusually rapid results and that is my reason for quoting them, thus to impress upon your mind the *possibilities* of treatment with the ACTINIC RAYS from the Quartz, Mercury-Vapor lamp—QUARTZ LIGHT

The following four cases wer reported by Dr. Plank:

Case 93

March 18th was cald to see M. H. Age 43, suffering from a peritonsillar abscess; neck swollen from angle of jaw to clavicle from median line anteriorly to median line posteriorly. T. 102; puls 120. Opend same March 11th at the Garfield Park Hospital. Opening made at junction of upper and middle third of sterno-mastoid muscle and posterior to it and about four ounces of pus evacuated and rubber tube inserted. On the 27th of March another abscess was opend and rubber tube inserted. This time at junction of middle and lower third of mastoid muscle and anterior to same and about one ounce of pus evacuated.

On April 27, 1916, she came to my offis with the same side of her face swollen, but the main point of tenderness was immediately below and anterior to the angle of the inferior maxilla. Chils had recurd, showing that pus had accumulated at this point. Began light treatment with Quartz Light. First treatment was of 10 minutes; the next day gave a 6-minute treatment on account of sunburn; the third day a 15-minute treatment, at which time the swelling was diminishing and she was without pain. Following this she had treatments May 1, 3, 5, 6, and 12, when she was discharged cured without having to put in a third drain or even to open the abscess. September 1st she is stil in normal condition.

Case 94

H. R. J. Male—Age 50. September 1, 1916. Has complaind of pain in his legs for some months past. He

tires easily so that by 11 a. m. he can scarcely work and is extremely irritable. He has lost thirty-five pounds in weight.

His appearance is the cachexia of one seriously il with the apprehension of one who does not expect to get wel.

His blood count on September 8, 1916, was 5,100,000 red and 146,000 white corpuscles; hemoglobin 95%; myelocytes 20%. On September 26, his red count was 4,600,000, with 320,000 whites; hemoglobin 80%; myelocytes 34%. On November 20, 1916, his red count showd 5,260,000 cels, with 201,000 whites; hemoglobin 82%; myelocytes 17%. On December 23, his reds wer 5,220,000; whites 182,000; hemoglobin 95%; myelocytes 30%. April 10, 1917, reds 5,000,000; whites 175,000; myelocytes 18%; hemoglobin 90%.

The treatment in this case was begun by giving a 2-minute exposure to Quartz Light, and the exposure increast one minute a day until we wer giving a 10-minute treatment. The interval generally lengthend until he now gets but one treatment a week.

When he began treatment he could scarcely walk a block. Now he walks seven or eight miles a day.

His spleen when he began treatment was within 8 c. m. of the median line and about 4 c. m. below the costal margin. It is now normal in size.

In September his long bones wer extremely sensitiv to touch. Now they ar not even tender and he says that as far as his sensations ar concernd he does not know why he is continuing treatment.

Case 95

S. S. Female—Age 44. Was referd to me in September, 1916. In January, 1916, took a severe cold. Was later treated for tyfoid fever, but pyosalpynx was diagnosed in June, during which month she was operated upon at the West Suburban Hospital. Wound heald perfectly, but the prolongd ilness and the shock of the operation had left her a typical neurasthenic.

Her blood count September 27, 1916, was 3,900,000 reds, 8,000 whites; hemoglobin 75%; B. P. 110-155.

I began treatment with Quartz Light, giving 3-minute treatments every day for one week, then every second day for a month, gradually lengthening the treatments to ten minutes. On November 16, 1916, her blood count showd

5,400,000 reds and 9,000 whites; hemoglobin, 85%; B. P. 95-130. All her nervous symptoms had improved and she was sleeping and eating normally.

This case was a typical post-operativ neurasthenia. April 12, 1917, she is without symptoms.

Case 96

F. B. Female—Age 26. Was exposed to Neisserian infection in December, 1916. Came to me February 15, 1917, complaining of burning on urination and a very free discharge, which compeld her to wear a napkin constantly. Tubes wer swollen and the right very sensitiv to touch. When walking she was compeld to stoop slightly and avoid all jarring.

Examination showd pus coming freely from the urethra, vagina and muco-pus from the cervix, all of which containd numerous gonococci. Began Quartz Light treatment February 15, with a Kromayer lamp, giving a 10-minute exposure. On February 28, the pain was decidedly improved and the discharge showd a markt diminution and the color was changing from yellow to white; there was no urethral irritation, appetite had improved and she could walk without pain.

QUARTZ LIGHT (CONTINUED)

DISCUSSION AND TECNIC

Quartz light possesses direct bacteriacidal action independent of temperature; possesses decided oxidation effects; generates H_2O_2 and nascent oxygen in the tissues. Tissues exposed to it show definitly increast metabolism both local and general. It promotes growth and repair of tissues; produces immediate fysiological effects not easily explaind, but suggesting pronounst reflex action by stimulation of periferal nervs. As far as my observations ar concernd, the effect of sterilizing wounds by means of Quartz Light has proved excellent; quite astounding has been its action in improving the general condition of patients in overcoming weakness and in reducing pain; also as a secondary effect the inducing of quiet sleep. These results ar directly traceable to the charging of individual corpuscles with light energy from the actinic rays.

Fromme reports that he has treated with Quartz Light 25 cases of pelvic inflammation, in nearly all of which wer pus tubes the size of a fist. Half of these patients wer stil under treatment; nine had been discharged as cured after an average of 15 exposures. In two cases no benefit was obtaind. In the cases considerd cured, all traces of adnexal enlargements hav disappeard. All these women wer treated as "outpatients," merely coming to the hospital for actual treatment. Their ordinary life was in no way interfered with. In addition to the inflammatory cases, six patients with pruritus vulvæ wer subjected to treatment with definit cures in two cases and markt improvement in the other four, all of whom wer stil under treatment when this report was made.

Quartz Light is a tonic to the local tissues, greatly increasing fagocytosis. It is absorbd as the sun's rays ar absorbd, thus increasing the oxygen-carrying power of the blood, increasing hemoglobin, increasing red cels and regulating the white.

Quartz Light intelligently used does not destroy tissue, as is often true of x-ray, but on the contrary, it is life-giving, increasing both local and general resistance, and the more treatments a patient has taken, the more he can take.

The length of exposure is guided by the following schedule suggested by Prof. Fromme, of course always re-

membering in this application that brunets can, in the erlier treatments, stand longer exposures than blonds.

This schedule is for a D.C. burner. For an A.C. burner the distance and time ar very different. The number of hours the burner has been used also makes a difference. This schedule is only to giv you some idea of time and distance:

Treatment No.	Day of treatment	Distance from lamp	Length of exposure
1	1	75 cm.	1½ min.
2	3	65 cm.	2½ min.
3	5	55 cm.	4 min.
4	8, etc.	50 cm.	5 min.
5	.....	50 cm.	7 min.
6	3 times a week	50 cm.	10 min.
7	.....	45 cm.	10 min.
8	.....	45 cm.	10 min.
9	.....	45 cm.	10 min.
10	.....	45 cm.	15 min.
11	.....	40 cm.	15 min.
12	.....	40 cm.	17 min.
13	.....	40 cm.	20 min.
14	.....	40 cm.	20 min.

This maximum is continued until a cure is obtaind.

(An A. C. lamp givs at least three times as powerful a ray as a D. C. Every month a lamp is used reduces its speed about one minute. The burner should be cleand at least once a year, after which it is as rapid as when new.)

Bach places radiations with Quartz Light first amongst the methods of stimulating the action of the skin since the parts of the skin radiated become hyper-anemic, begin to peel in a few days and turn dark, thus becoming richer in pigment and exhibiting increast turgescence, which, after a number of radiations, also extends over the entire body to parts of the skin which hav not been exposed. Thus in Quartz Light we possess a specific means of stimulating and improving the action of the skin and therefore a remedy for *gout* so far as a deficient removal of uric acid due to unsatisfactory action of the skin is concernd.

Dr. R. C. Jamieson, Detroit, says:

Chancroids of the more indolent fagadenic type ar cured by Quartz Light when all other remedies fail. Varicose ulcers heal more redily and the local circulation is improved; folliculitis improves at once and I found Quartz Light extremely useful in pyogenic innfections complicating other conditions.

The action of Quartz Light radiation is based upon the fact that the internal organism is affected by blood impregnated with light energy. This enables the iron and sulfur in the blood to convey an ample quantity of oxygen to the cels and withdraw carbon dioxid from them, thus enhancing metabolism.

The European war which has made such hevy demands on modern surgery and has incidentally been the vehicle of stupendous progress in these fields is also responsible for an unprecedented increase in the use of Quartz Light.

Three thousand Quartz Light apparatuses ar now employd in the field as wel as permanent hospitals of the various belligerents, and gratifying results ar being secured. Not only ar the ultra-violet rays powerfully bactericidal, preventing complications, but they also accelerate the granulating and healing of the wounds in a remarkable degree. General radiation is more often found to exert a soothing influence upon the nervous system in the frequent cases of nervous breakdown coming under treatment.

Under Quartz Light the increase in vitality of a patient is almost always in direct proportion to the pigmentation. Pigmentation imparts to the skin a special strength, it favors the healing of wounds and imparts a local immunity to bacterial diseases of the skin. Thus a bronzed skin is never affected by acne or furuncles; the metabolism is increast in a remarkable way; both the absorptiv and eliminativ power of the cels is heightend. Quartz Light is a powerful tonic. The appetite is increast, the digestion activated, the secretions thru kidneys and skin ar increast. Laboratory tests show an increase of eliminated bacteria and toxins. The effect on the circulation is an activation of the cutaneous vaso-dilation. This increase in the periferal circulation assists the hart greatly. *The blood pressure is of course lowerd.*

There is a notable increase in the number of red blood cels and in the percentage of hemoglobin under Quartz Light; respiration becomes at first accelerated and then returns to normal. The quantity of carbonic acid gas exhaled increases about 15 per cent.

One physician reports as follows:

Local treatment of deep-seated diseases has in every case influenst them favorably. Under the treatment intense reddening and later pigmentation of the skin occurd.

In fistulæ the first effect is an increast secretion which decreases until the fistulæ ar closed. Granulations become clear, infiltrations and edema disappear, pain ceases, in most cases the feeling of fatigue and loss of weight occurs; later on an increase of weight may be observd. Two of my patients hav gaind over nine pounds, one of these being a little tuberculous subject, 17 years of age, with lungs affected and grave fistulous sacro-iliacal tuberculosis who could not progress at all under any other treatment.

The improvement in general helth has been evident in all cases, sometimes even surprizing. Local as wel as splendid general results hav been obtaind. In the case of a girl who had undergone 12 operations for grave tuberculous coxitis with numerous fistulæ and acute edema, the improvement, which extensiv operations had faild to affect, was obtaind by Quartz Light. The edema has disappeard, the wounds hav become helthy, the fistulæ ar gone and the general condition is at present excellent.

The tecnic of radiation with Quartz Light must go in line with the effect in view. Considering the bio-chemical changes which the actinic rays call forth according to their intensity, no universally applicable rules can be formulated. Principal rule is *caution*. In general, first radiation 40 inches distance, 2 minutes back and 2 minutes front, to vary according to the patient's complexion; darker skins wil stand the rays better than blonds. Second exposure radiation of same distance, increase in time of one minute; later from 1 to 3 minutes increase, and the distance lowerd gradually to about 20 inches radiations back and front, 20 minutes without lasting disturbances of the skin. The rule is to giv exposures every second, third or fourth day. A decided erythema sets in as a skin reaction, but only in the beginning. After several exposures the skin tans and is not susceptible to further radiations, provided the intervals do not excede 8 days. When there ar longer intervals between, it is better to advance cautiously. The abov directions apply to Quartz Light apparatus of approximately 3,000-candle-power such as is used on a 110 v. alternating current. Treatments given with direct current apparatus would require from two to three times longer time or shorter distance thruout.

General Conditions

(1) Generally we find that dark people stand more light than individuals of lighter complexions, brunets more than blonds.

(2) A person who tans when exposed to the sun stands more than one who blisters when so exposed.

(3) A congested skin more than the normal skin, hence the precaution to protect all normal skin from exposure.

(4) A thick skin, especially one which rests upon a large amount of fat, stands more than a thin, dry skin.

(5) The sensitiv skin, shown by drawing the finger nail across the skin or by stroking it, requires a very moderate first treatment.

(6) The pigmented skin requires more light than one free from such pigment.

(7) Certain parts of the body, for example the palms of the hands and relativly speaking, similar parts of the feet, require a large amount of light.

(8) The hed and other parts coverd by hair absorb the light and consequently require more light.

(9) The external genitalia and the flexor surfaces of the extremities stand the light in moderate dosage.

(10) Mucous membranes stand the light in pretty fair dosage.

General exposure should be given with body completely naked (See illustrations). The eyes must be carefully protected from the ultra-violet rays, which otherwise wil cause violent inflammation. Most operators cover the whole of the face and this has the advantage of preventing the tanning of the face by the actinic rays. The natural tint of the complexion is thus preservd; and to some extent allows the formation of a judgment as to the general state of the patient. If the patient does not object, tan the face too. I find that those with nasal catar ar greatly benefited by raying the face. If patient keeps eyes closed, there is no danger. Experience on scores of cases makes me *sure* of this.

Nogier has demonstrated that an exposure of 10 minutes was sufficient to sterilize completely a culture of stafylococci in agar in a petri dish; that vegetable matter exposed to Quartz Light was promptly affected. Bordeaux and Nogier made in 1917 in France experiments with Quartz Light demonstrating the absorptiv power of the blood for the

true ultra-violet rays, thus explaining the reason that firm pressure insures deep penetration. The spectrum shows a pretty sudden reduction of methemoglobin. They consider the light as sure and effectiv and far more activ than the Finsen light.

Rave details 12 cases of eczema heald with Quartz Light under pressure, and while he found it effectual in the cronic, infiltrated cases, and also in the pustular eczemas, it was his opinion most effectiv in the treatment of the stubborn, recurring vesicular eczemas.

LIGHT RADIATIONS AND PROTOPLASM

In a recent editorial of a medical journal this subject is treated in detail. It states that "the newer knowledge in the field of fysics has brot about a recognition of the fact that in addition to the visible electro-magnetic waves, the invisible infra-red and ultra-violet light waves also hav indisputable chemical and biologic effects." Dr. Bovie has recently reminded us anew that "the substances of which living organisms ar composed ar capable of resonant vibrations over a considerable range of vibration frequency, including the entire range of solar radiation. Protoplasm is capable of 'detecting' and being modified in some degree by the electro-magnetic manifestations constituting the radiant energy receivd from the sun." The editorial further states "that the fysiologic effects of light must be the result of fotochemical reactions. One of the important discoveries made by Finsen was that it is the blood in the skin which absorbs most of the ultra-violet light. Sunlight ultra-violet can penetrate blood-fild skin only a fraction of a millimeter. But if the skin is made anemic (ischemic) by the pressing out of the blood, bacteria can be kild by ultra-violet light which has past thru 4.25 millimeters of skin."

Pougnet, of France, has applied to the human tissues the discovery that the ultra-violet rays revive frost-bitten plant buds. He exposes a frozen lim for three or four minutes every two hours to the rays of the quartz mercury-vapor lamp, with a current of 110 volts and four amperes at a distance of 25 cm. No appreciable benefit was observd with simple freezing, but when it was accompanied with ulceration the effect was quite markt, healing commencing

on the third to fifth day. In the case of soldiers with both feet frozen and blisterd, swollen and painful, the pain was arrested by the ninth to tenth sitting, and swelling subsided by the sixth day. He feels that this method of treatment warrants a more extended trial during the present war.

One observer reports, as a result of experiments upon himself, that the increast vascularity resulting from Quartz Light erythema was stil noticeable six months later. This property of the chemical ray is of great value in therapeutics, as it affords a most admirable method of producing derivativ effects whereby a state of collateral anemia may be induced in deep lying parts. It is often in the highest degree important that such effects be secured as the only means of affording relief in cases of visceral congestion of various sorts, particularly in such disorders as cronic bronchitis, gastritis, hepatic congestion, intestinal catar, ovarian and other pelvic congestions, congestions of the spinal cord, etc.

Procaccini exposed to sunlight sewer water containing 300,000 to 420,000 bacteria per cubic centimeter. After a day's exposure the water was steril. Bacteria ar redily kild by light at the surface of the soil, altho twenty inches below the surface they may resist destruction for four or five months.

The maximum bactericidal energy is found, by experiment, in the middle third of the ultra-violet region of the spectrum. The penetrating power of the various rays is found to be in inverse proportion to their bactericidal and chemical power. (Boecker).

For treating lupus of the mucous surfaces it is wel to employ a quartz lens attachment on the mercury lamp. The most suitable cases of lupus for treatment by the quartz-lamp ar those with lesions on the face and neck of a moderate extent, and with whom excision is no longer possible. In such cases one can operate either thru compression with or without the intervention of blue filtering, and must then employ séances of 20 minutes, later 30 to 40 minutes, or one raying from a distance of 10 cm. for a period of an hour or an hour and a quarter. There then occurs a strong inflammatory reaction after the subsidence of which (a matter of two or three weeks) the lamp may be applied again. By

means of this method one may secure very good results. And also with other forms of skin tuberculosis, for instance, *tuberculosis verrucosa cutis,* the mercury lamp may be profitably employd. With *lupus erythematosus* it acts in a very striking fashion. In these cases many operators employ only compression-raying; I hav always workt with the distant-ray and with very good results. The intensity of the single rayings and the number of such must be determind according to the duration of the disease. At least the applications must be of sufficient intensity to cause desquamation, and in the case of old *lupus erythematosus* especially, it should be allowd to cause the formation of blisters.

The bactericidal effect of the quartz light shows itself in a markt manner especially in the *superficial mycoses, tricofytoses,* further in the so-cald *purulent dermatoses,* diseases causd by the pyogenic cocci, the stafylococcus and streptococcus pyogenes. These ar the diseases formerly groupt as the *Impetigos,* then more latterly as *folliculitis barbae, folliculitis decalvans* and *acne vulgaris.* But not alone the superficial pyodermatoses but also the deeper infections of the skin, abov all others furunculosis, ar especially wel adapted for treatment by means of the rays of the quartz light. The solitary, more deeply lying carbuncle must be subjected to the usual method of treatment. But one cannot secure in any manner a better disinfection of the skin in furunculosis than thru raying with the quartz lamp. The bath during the course of a florid furunculosis is a dangerous experiment; it is in the majority of instances a mesure which softens the skin, and, when to the water ar added such antiseptic substances as permanganate of potash, bicloride of mercury, sulfur, lysol, etc, brings not only many bacteria out of the deeper parts of the skin on to the surface, but also effects a removal of these bacteria and their establishment in new places in the skin. The best disinfection is secured thru the quartz light. It kils a great part of the bacteria in the superficial strata of the skin, and the rest ar thrown off with the desquamating skin.

In a large number of skin diseases a caracteristic desquamation is produced. Naturally we can produce desquamation by means of chemical agents. But it has been shown that the desquamation secured with the Quartz Light is much more uniform in results than the chemical methods which we formerly employd. *Acne vulgaris* has alredy been

toucht upon. With *acne rosacea* one sometimes secures with a single application complete results; in other cases the raying must be repeated a number of times.

Many authors treat *soriasis* and *pityriasis rosea* with the Quartz Light. Eczema of various sorts forms the *widest* and most *favorable* field for this method of therapy.

Lupus

Glebowsky made a histologic study of the process of healing in cases of lupus under the influence of Quartz Light. Twenty-four hours after exposure, sections of the skin showd dilatation of the vessels and infiltration of the surrounding parts with activ leucocytes. The tissue spaces wer dilated. Small vacuoles wer clearly markt in the giant cels. These appearances increast as the number of exposures increast. The giant cels wer destroyd entirely, on an average, after four to five exposures. The degenerativ processes in the epithelial elements wer less markt as compared with those in the cels of granuloma, where observation showd most conclusivly the value of Quartz Light in assisting the tissues in the battle against invading parasites.

Histologic Changes Induced in the Skin by Quartz Light

1—Pronounst dilation of the superficial and deep cutaneous blood vessels.

2—Migration of the leucocytes.

3—Increase in the number of activ tissue cels.

4—Swelling of the collagen.

5—Thickening of the rete mucosum.

6—Hyperplasia of the epidermis and abnormal cornification.

7—Swelling of the prickle cels of the epidermis due to a parenchymatous edema. This swelling is causd by the actinic rays. When the skin is examind microscopically there seems to be small vesicles here and there, due to dilatation of the lymf spaces. (*MacCleod and Glebowsky*).

Meirowsky states that under the stimulus of Quartz Light, nuclear division of the epithelial cels takes place.

Unna claims that Quartz Light makes the skin dense and harder, the protoplasm being reduced to keratin.

Quartz Light on Blood Vessels

Lack has shown that the blood vessels ar the first parts affected by the light. The endolitheum lining of their walls swels and grows rapidly and the process ends in endarteritis, which finally obliterates the vessels. These changes ar produced only when the rays ar applied in a greatly concentrated form and for a long period. This is no doubt the reason that angiomata ar destroyd by the actinic rays from the quartz, mercury-vapor lamp.

The author in a series of experiments with the Quartz Light discoverd that it would stop the flow of blood from small wounds and that it would coagulate blood and also solutions of albumin.

THERAPEUTIC ACTION OF QUARTZ LIGHT

In Surgery

It is indicated in surgical tuberculosis, fistulæ of all kinds, slowly healing sores, ulcers, festering wounds, furunculosis, carbunculosis, dermatitis, hematomata, etc., as far as no strictly surgical indications precede.

In Internal Medicin

It is indicated in disturbances of metabolism of all kinds, clorosis, anemia, leukemia, high and low blood pressure, arterio-sclerosis, hart neuroses, some organic lesions of the hart, kidney diseases in general, liver diseases, obesity, tuberculosis, peritonitis, diseases of the mesentery glands, cronic constipation, cronic stomac and intestinal disturbances.

The effect of the Quartz Light on the body is at times fenomenal as it often increases the appetite after five to ten radiations, and with the increase of appetite the general condition of the patient is remarkably changed. The weight of the patient usually increases to correspond with the increase in appetite.

The Quartz Light is also indicated in "reumatism," neuralgia, coccyalgia, gout, diabetes, neurasthenia, hysteria, rachitis, osteo malacia, bronchial and nasal catar, cold in

the hed, rinitis, laryngitis, bronchitis, sinusitis, whooping cof, etc.

(I would always advize oxygen-vapor therapy to go hand in hand with quartz-light therapy.)

In Gynecology

It is indicated in backake causd by menstrual disturbances, menstrual irregularities, menorrhagia, leukorrhea, cervical erosions, catar of the cervix uteri, vaginal catar (hypertrofic or atrofic), specific urethritis, specific vaginitis.

In the various conditions named, the lamp indicated for the work should be used. For example, for treatment over the abdomen, the Heræus Alpine Sun Lamp should be used, while for vaginal treatment and treatment about the external genitals, the Kromayer lamp with suitable applicators should be used.

Before using the Quartz Light over the external genitals for pruritus, vulvitis, vaginitis, etc., the parts should be thoroly clensd, and for this purpose probably hydrogen peroxid is very efficient. It can be used diluted to suit the condition.

Often cervical erosions which hav baffled all other therapeutic mesures can be entirely heald within six treatments.

In treating all local conditions, it is wel to treat the general condition of the patient.

Tuberculosis

In the treatment of tuberculosis the exposures should be begun very carefully.

In surgical cases, the affected parts should be locally treated by means of the Kromayer lamp with suitable lenses and then the body as a whole should be treated with the Heræus Alpine Sun Lamp.

As the skin becomes pigmented, owing to radiations, the treatment can be lengthend without any unplesant consequences.

The internal temperature is never increast by quartz-light radiation.

When correctly applied, the Quartz Light bath has a decidedly soothing and invigorating action, which markedly relieves congestion.

The increase in strength of the patient is almost always in direct proportion to the pigmentation. Pigmentation from the quartz light appears to impart to the skin a special strength. It favors the healing of wounds and imparts local immunity to bacteriological diseases of the skin. I do not remember seeing a bronzed skin attackt by acne or boils.

For *lupus vulgaris* there is probably no modality known that can even be mentiond in comparison with the quartz light. For this condition the reaction must be made very severe to begin with and then reduce it as helthy granulation procedes. General systematic treatment by means of the quartz light is indicated in treating lupus vulgaris as much as if the patient had tuberculosis of the lungs.

Iodin therapy should be instituted the same as for pulmonary tuberculosis.

Apart from the deep surgical tuberculosis, the quartz light affords extraordinary and unhoped-for results in all cases however hopeless they may appear.

Often in deep surgical tuberculosis the quartz light, properly applied, wil bring about astonishingly good results.

Under the bactericidal and sclerotic influences of light in combination with the drying action of air free from bacteria, wounds become coverd with activ granulations and become cicatrized, fistulæ dry up, the sequestrum is spontaneously excreted, and even entirely necrotized falanges or metatarsal bones detach themselves without pain.

In local applications the distance of the Kromayer lamp lens should be from 3 to 10 inches, but for general treatment the Alpine Sun Lamp (A. C.) should be about 36 inches distant, and the individual séances gradually increast from five minutes up to 20, 30, or even 60 minutes at a time. This increase of exposure must however be very gradual, and cannot be pusht as rapidly with a blond as with a brunet.

In Ofthalmology, cronic, long-standing forms of conjunctivitis ar greatly benefited and often cured. Many affections of the cornea and eyelids ar relievd or cured by the quartz light after all other mesures hav faild.

In palpebral edema the Quartz Light wil often act like magic after all other means hav faild. In such cases ray the entire trunk including the face—eyes closed of course, but not covered.

Tecnic of Compression Radiation

The object of the compression treatment is, by producing a local dehematization thru the pressure of the quartz lens on the tissues, to enable the ultra-violet rays to penetrate into the deeper layers of the epithelial tissues insted of being absorbd by the blood in the surface capillaries as would otherwise occur.

In cases where, for fysical reasons, it is not possible to exert a sufficient pressure on the tissues, either a subcutaneous injection, or a surface application of adrenalin may be resorted to, and the lens merely placed against the surface without exerting any pressure on it.

In general, the thicker the blue filter employd, the greater penetration can be secured. At the same time, however, the intensity of the rays penetrating the thicker filter wil be diminisht and therefore the time of exposure must be correspondingly lengthend.

The lens selected should always be, as nearly as possible, the same size as the lesion to be treated and a simple method to avoid burning the helthy skin surrounding the lesion under treatment, is to protect it with adhesive plaster or paste.

The lens should be prest very firmly against the tissue to exclude all the blood. For the treatment of lesions occurring on the mucous membrane special applicators, often of individual construction ar required, and as a rule quite short exposures, 10 to 60 seconds ar employd.

In order that I might make this lecture on Quartz Light as complete as possible, I hav communicated with very many physicians who hav had a good deal of experience with the Quartz Light both from the Heræus lamp and from the Kromayer lamp.

Since beginning this lecture, I hav also done some "intensiv training" in laboratory findings with Quartz Light myself, besides having gleand a great many facts from recent literature regarding it.

Dr. O. W. Joslin, medical director of the Dodgeville General Hospital and Pine Grove Sanitorium, Dodgeville, Wis., reports under date of Feb. 2, 1918, as follows:

We ar using the Heræus Alpine Sun Lamp and the Kromayer lamp as a routine treatment in all cronic cases, particularly in anemia and in all cases of cancer and tuberculosis. As we hav not used the quartz light alone in any treatment,

we ar hardly in a position to say definitly what that modality alone would do, but we hav notist that all of our cases hav done much better since we hav been using the quartz light in connection with other modalities.

We hav been keeping records of this quartz light work for about nine months. We hav been using the quartz light from the Kromayer lamp on many cases of nose and throat troubles and get immediate and uniformly good results. In fact in many of these cases we hav achievd results that I do not think could hav been achievd by any other method.

I should like to report one case.

Case 97

Young married woman with a very severe herpes progenitalis covering the entire vaginal surface, including the whole surface of the cervix uteri. One 4-minute treatment of the quartz light thru the Kromayer lamp was given in the evening. The next day the whole condition was 50% improved. Another treatment given the second day, and the case was entirely wel.

To those who ar not initiated in quartz light therapy, this might sound a little fishy, but to those who ar accustomd to the results from the use of the Quartz Light it will seem only commonplace.

For surface infections I can say unreservedly that the Quartz Light acts like magic.

Dr. Wm. L. Clarke of Philadelphia writes as follows:

My experience with filterd ultra-violet rays by the compression method in the treatment of nevus flammeus and allied skin lesions has led to the following conclusions:

1. "Port-wine" nevi, telangiectases, rosacea, and other superficial vascular skin lesions may be treated with good cosmetic results.

2. Powerful ultra-violet rays with screens to filter out the red, yellow, and green, and compression by means of a quartz lens ar necessary for success.

3. The treatment wil improve scars causd by caustic agents sometimes used to treat these lesions.

4. Failure may be due to imperfect tecnic, carbon adhering to the quartz enclosing the mercury or to the lens.

5. Nevi which fade upon pressure respond more rapidly than those which do not fade, tho both types ar

quite amenable to treatment. All nevi do not react with equal promptness. When there is a complication of thickend connectiv tissue, prolongd treatment is necessary.

6. Young children respond more rapidly than adults, because the skin and vessel walls ar thinner and less mature, hence the activity of the rays is augmented.

7. Enlargement of features, such as lip, nose, etc., due to blood engorgement, sometimes complicating "port-wine" nevi, ar reduced by this method.

8. Brunets require more prolongd treatment than blonds on account of the skin resistance offerd to the rays by the skin pigment.

9. Helthy skin is more susceptible to ultra-violet rays than abnormal skin, and must be protected.

10. This is a safe method for patient and operator:

Quartz Light Tecnic for port-wine stains: Helthy skin is protected with adhesive plaster and a quartz lens of the proper size is used. The skin is clensd thoroly with tincture of green soap, followd by alcohol. The lamp is turnd on to three and sometimes four buttons (D. C.). If on the face, the patient can hold the lamp themselvs by resting elbow on a small table, or if the operator has time he can hold it. The lens is prest very firmly against the tissue to exclude the blood. This is continued from twenty to forty-five minutes, depending upon the depth of lesion, and the condition of the lamp; when the lamp is new the same result is obtaind by a shorter exposure, while when it becomes carbonized it takes a longer time. A blue ultra-violet filter of two millimeters' thickness, is invariably used. A crust forms in the course of from twenty-four to forty-eight hours. In about two weeks another treatment may be given; three to four treatments of this kind ar necessary. This could be done with one exposure, but I prefer a series, for the reason that the patient becomes tired, and there is too much bruising of the tissue by continued pressure.

Case 98

Male, aged twenty-five, brunet. Deep purple-red congenital *"port-wine"* nevus on left side of face, involving eyelids, nose, and lip. No fading under pressure. The nevus was studded with small erectile angiomas, which wer successfully treated by the dessication method. First ultra-violet radiation September 3, 1914. Six twenty-minute exposures

of each area wer given, averaging three weeks apart. The nevus became lighter in color after each treatment, and at the present time there is slight evidence of the mark, the skin remaining soft and smooth. An interesting feature of this case was a markt enlargement of that portion of the lip involvd by the nevus, which became almost normal in size after treatment. This patient had been treated by chemical caustics without success, which resulted in some scarring. These scars wer very much improved by the Quartz Light treatment.

Dr. Jordan, Seattle, Washington, reports:

Case 99

Cronic *facial erysipelas*. Miss M. D., referd by Dr. D. M. Stone. Patient had had a most trying time for a year and a half prior to calling on us. She came for treatment Sept. 22, 1915. Often we despaird of ever doing her any permanent good. We cald Dr. F. S. Palmer in consultation. Many and varied things wer tried and with little or no appreciable lasting effect. Among other things we employd x-ray, erysipelas vaccine and anything which we could induce her to try. Finally, on Dec. 28, we began the quartz-light treatment. We made about eight or ten exposures and at this date, six months later, she has a complexion which, exprest in her own words, "is the envy of all her friends."

Dr Schuyler Clark of New York City reports:

The ease of application of Quartz Light would seem to recommend it, it being only necessary to hav access to a street current and a cold-water faucet. It is self-lighting and regularly in working order apparently, and can be placed in a standard and holder with only an eye as to the flowing water necessary, or held by a nurse, as seems most convenient. There hav so far been no serious effects recorded to operator or patient. Looking into the light for even a short time wil, however, produce some sclerotitis and one must always remember the possibility of being sunburnd by even short exposures. Any kind of a large glass wil protect the eye, kid or rubber gloves seem to protect the hand of the operator, and the patient can be easily protected by the fotografer's black cloth used in focusing the camera or by thin layers of tin foil. The red, yellow and green rays can

be easily filterd out by varying thicknesses of screens, thus allowing a prolongd and penetrating exposure without an undue amount of superficial inflammation.

The rays from the Kromayer lamp ar quite analogous to the sun's rays on a high mountain and the dermatitis produced is quite like a sunburn of greater or less severity, which does not tend to produce scarring, but does result in a more or less browning or tanning of the skin. The ultraviolet rays ar germicidal, soothing and anti-pruritic, stimulating and constructiv, or caustic and destructiv, depending upon the length of the exposure and the amount of rays emitted, and the action is, as has been said, superficial or deeper, depending upon whether the exposure is at a distance or the lens is firmly prest against the exposed part. The size of the dose can be easily regulated and is a fairly suitable quantity owing to the mecanical construction of the lamp. It depends directly upon the reostat, the permeability of the quartz lens, the distance of the source of light from the area exposed and, to some extent, on the susceptibility of the skin to light rays. A corresponding susceptibility to the sun's rays is regularly present and should be considerd in our initial dose.

All of my applications, with a few exceptions at the start, hav been made thru the blue quartz filter and all of the diseases treated, except the cases of eczema, soriasis, alopecia areata and pruritus, hav been done by the pressure method. The little scarring and the regularly good results I hav obtaind in my cases, I believe to be due to the fact that I used almost the thickest blue filter and very prolongd exposures. My personal experience with the Kromayer lamp comprizes the following cases:

Case 100. *Nevus Vasculosus*

Mrs. A., of English extraction, 36 years old. History. Since birth patient has had a port-wine nevus on the right side of the face, in large patches, broken here and there by sound tissue, occupying right temporal region, right maxillary region, extending wel up on the lower lid to inner canthus of eye, right zygomatic region and side of neck and inferior maxillary region. For the past 15 or 20 years various means hav been used on small areas, namely: caustics, high frequency spark, carbonic snow, electricity, etc.,

but these means wer either without result or left unsightly, pitted scars.

Seven months ago I began exposing small areas of this nevus to the Quartz Light, using firm pressure with the quartz window and the blue quartz filter. Exposures varied from 30 to 35 minutes and wer regularly followd in from 12 to 24 hours by an erythema and later by a superficial blistering, and finally a crust dropt off in from 10 to 14 days, leaving a dul redness which gradually disappeard with the obliteration of the nevus and a comparativly normal skin, without scars. In some instances it took a second application of the light to entirely obliterate the nevus. With the exception of scatterd tiny areas of color or minute, dilated vessels that wer apparently not included in the numerous areas exposed, and rather disfiguring scars from the old treatments described, the patient presents a fairly normal appearance. Altogether, I should say that a total area of deep red, port-wine nevus, 3 inches by 6 inches, has been removd without a scar. Indeed, the patient insists that there is not only no scarring, but that old scars, which wer necessarily included in the exposure, ar now much flatter and less notisable.

An interesting feature of the case was the appearance of the lesions 6 to 12 hours after exposure. The exposed area in each instance was distinctly darkend, and running thru it was seen a network of fine, almost black, strait, curvd and irregular lines, which wer undoubtedly vessels in which the blood had been coagulated as a result of the exposure. In this way, I believe the nevus is obliterated, and that would explain the reason why it can be done without a resulting scar.

Case 101. *Nevus Vasculosus*

G. L., age, 6 years, American, female. History: Since birth child has had a port-wine nevus below the right eye about the size of a quarter, deep red in color, and most conspicuous. After one exposure of 35 minutes, the lesion entirely disappeard without any scar, leaving only a pin point dilated vessel behind. The coagulation of the blood in the larger vessels of the nevus was here again distinctly notisable.

Case 102. *Nevus Vasculosus*

A. G., female, 38 years of age. History: Since birth patient had had a very pronounst port-wine nevus on the

left side of nose, the size of a thum nail and almost a solid patch, with a few scatterd areas, the size of the palm of the hand on the right malar region extending down to right upper lip. At least three-fourths of this area, all that has so far been exposed, is cured without a semblance of a scar and mostly after one application.

Case 103. *Lupus Vulgaris*

J. K. C., male, 53 years of age. History: Patient has had a patch on left loin for 15 years. From time to time it has increast a little in size; had had some treatment with strong salvs that never helpt lesions much. When first seen, there was a lesion present a little larger than a silver dollar, dul red in color with little scabs scattered thru it. Under these scabs wer little depressions and along the edge wer typical lupus tubercles. The edge was not raisd nor pearly. The lesions apparently entirely disappeard after one exposure of 30 minutes with the unfilterd rays, but there was a very markt reaction. Beginning on the second day at the site of the tubercles there wer notisable whitish, sluffing spots. Three months later the patient presented stil some redness of the area exposd and a tubercle lesion in the centre of this area. This disappeard after a second exposure of 35 minutes, and the patient now, after 8 months, seems completely relievd of his trouble.

Case 104. *Lupus Erythematosus*

C. H., female, 38 years old, German extraction. History: This patient's trouble began 8 years ago and spred rather rapidly after typfoid fever. The lesion has been cauterized several times, but without much effect.

When first seen, this patient had a solid patch occupying the left side of nose and extending out on the cheek for about two inches. This lesion also extended across the bridge of the nose to the right side and somewhat on the right cheek. After numerous treatments, the patient stil presents a small patch across the bridge of the nose, and one near the inner canthus of the left eye, which ar under treatment. Scarring is seen in some parts of the heald areas due to their original deep-seated, seborrheic inflammatory caracter.

Case 105. *Lupus Erythematosus*

R. F., female, aged 36 years, English. History: Six years ago the lesion first appeard on the lobe of the right ear, and was thot to be a chilblain. Shortly afterward, lesions appeard on the top of hed, rapidly spreding and extending in patches down to and including the eyebrow.

When first seen, a typical lupus erythematosus, occupied the left half of the scalp, that part of the face between the right eye and right ear, the right half of the forehed and the lobe of the right ear and there was also a patch on the left side of the nose the size of a quarter. The lesions treated on the face ar greatly improved after two or three applications. No effort has as yet been made to treat the scalp, but here I intend to try exposures at a distance of several inches, producing pronounst sunburn and watch the result.

Case 106. *Lupus Erythematosus*

L. M. W., female, aged 22 years. History: Lesion began as a papule on the right malar region 2 years ago. It gradually spred and 15 months ago a patch came on the left cheek; latterly two small patches hav appeard on the right upper lip. The lesions, except on the lip, wer quite deep and thick and inclined to be inflammatory. They wer a little larger than a 5-cent piece. After several treatments, four moderately long applications being required for one of the patches, the lesions hav apparently recently heald, leaving scars where the deep lesions wer and pigmented areas where the patient was exposd to the light.

Case 107. *Lupus Erythematosus*

M. B., female, 31 years of age. History: Three years ago, patient first notist trouble on the nose which disappeared slowly under salvs, but reappeared 1½ years ago and has gradually spred since then. When first seen, the patient presented a thick, inflammatory lupus patch, partially coverd with seborrheic-like, greasy crusts, occupying the top and sides of the nose and extending in a small patch on the left cheek. This has been the most resistant case to treatment I hav seen, but is wel on toward a cure now, the crusts having ceast to form and the lesions having been leveld to the surrounding skin. There ar islands in it of

new scar tissue. I believe there is no doubt about the ultimate favorable outcome of this case.

Case 108. *Tuberculosis Verrucosa Cutis*

F. McV., male, aged 27, occupation, unpacking chinaware. History: Six months ago the lesion began as a small papule on the back of the right hand near the base of the little finger, and has gradually grown and assumed the typical warty caracter of this lesion. It is about the size of a quarter. When last seen, there was only a vestige of the lesion left after 3½ hours of exposure to the light in divided doses. At that time a fifth exposure was given and the patient has not since reported for observation. I see no reason, from the markt benefit produced in this case, why it could not be carried on to a successful termination.

Case 109. *Cronic Eczema of the Anus and Scrotum, the old Lichen Cronicus Circumscriptus, so-cald*

W. C. D., male, 40 years old. History: For 20 years this patient has been harast and sometimes almost crazed by his condition. Almost every known means has been used by some of the most prominent dermatologists in this country with either no effect or only tempory relief. The condition was a sharply marginated, thick, lichenoid, scratcht eczema, with almost intolerant itching and only the most soothing applications could be used, because of the tendency for this to become an inflammatory condition.

For the past 10 months this patient has been under weekly or semi-weekly exposures, keeping the lesions coverd between times with soothing ointments, and he unhesitatingly declares that he has had the most comfortable 10 months in the past 10 years. The lesions ar leveld and, except for scatterd recurring papules, the skin seems normal, with a rather unusual circumscribed whitening.

For 2½ years I had, with consultations and by personal efforts, tried to, at least, make this man more comfortable, but until the Quartz light treatment was begun, I never had benefited him in the least.

In thick patches of soriasis I hav found this an effectiv and safe means of quickly removing them, one application being usually sufficient for any patch.

In the itching of eczema and many other pruritic conditions, applications enuf to produce a mild sunburn can regularly be counted upon to relieve it.

Case 110. *Nevus Pilosus*

M. B., female, aged 19. History: Since birth patient has had a pigmented, hairy nevus on the right cheek, the size of a 5-cent piece. The lesion was considerably elevated, almost warty and coverd with stif black hairs. After four very prolongd applications, the discoloration has been removed and the lesion is considerably leveld, but the hairs stil retain their vigor. These can redily be removed by electrolysis.

Alfred M. Hellman, B.A., M.D., F.A.C.S., New York City, reports:

I hav completed treatment to date and can report as absolute cures eight cases of *pelvic inflammation.* The patients wer treated ambulatory without any other therapeutic mesures having been employd, and my diagnosis before treatment was always confirmd by at least one and sometimes by three of my colleags. Only a short time has elapst since the completion of treatment. All eight hav been examind recently and remain wel.

Case 111

Mrs. G., aged 25. History taken October 8, 1914. Married three years, one child, one-and-a-half years ago. Menses regular. Pain on both sides of abdomen low down, worse on right side. Pain started shortly after confinement which was instrumental. Some frequency of micturition. Patient has been treated in a prominent dispensary for some months with tampons and douches. She was told she had parametritis and pelvic exudate.

Diagnosis.—Retroflexion, slight procidentia, prolapst right ovary. Both tubes enlarged and tender—right one more pronounst.

October 12. Cystoscopy reveald a mild trigonitis.

October 12 to November 24. Hot air douche, tampons, and local applications to cervix three times a week without improvement.

November 24, 1914, to February 13, 1915. Twenty-five applications of Quartz Light.

December 24, 1914. Before eleventh treatment patient feels no more pain; examination shows right tube to be swollen.

February 13, 1915. Before twenty-fifth treatment shows patient entirely wel except from procidentia which causes no trouble.

August 1, 1915. Free of pain—no enlargement felt.

Case 112

Mrs J., aged 32. Married ten years. Three children and two self-induced abortions, the last one four years ago. Since then pain in lower abdomen gradually growing worse. Has been treated without help by usual local methods.

December 9, 1914. Diagnosis—parametritis, salpingitis duplex.

December 9, 1914, to May 20, 1915. Sixty-two treatments with Quartz Light over a period of 166 days. After twenty treatments patient felt perfectly wel but treatment was continued because of persistent slight tenderness in vaginal vault to left of cervix, and thickening of right tube. This slowly disappeard. August 2, patient wel.

Case 113

Mrs. E. K., aged 33. Married nine years, never pregnant, complaining shortly since after marriage. Operated one year ago for right-sided pyosalpinx. Menses regular. Complains of severe leukorrhea and pain on left side. Diagnosis: Stony hard, tender, left-sided pyosalpinx with adhesions.

December 16, 1914, to June 11, 1915. Fifty treatments in 180 days. After twenty treatments the patient felt perfectly wel but the fluor albus tho less was stil present and the tumefaction tho smaller could stil be felt. Except absence of right adnexa nothing abnormal could finally be felt and the leukorrhea had stopt.

Case 114

Mrs. H. F., aged 25. History, March 6, 1915. Married five years; one child which died when six weeks old. No miscarriages; menses regular until recently. Now irregular. Severe pain in left lower abdomen for two or three days.

Diagnosis: Considerable enlargement of left tube with exquisit tenderness in left fornix.

March 6 to April 7. Twelv treatments in twenty-eight days.

March 13. Tenderness very much less than at first examination. Patient has just finisht menstruating.

April 9. Entirely cured. No masses, no tenderness. Uterus slightly enlarged.

April 16. Patient undoubtedly pregnant. No masses, no tenderness.

July 30. Patient has had an abortion performd since I pronounst her pregnant April 16. The adnexa hav remaind perfectly normal.

November 15, 1915. Stil perfectly wel.

Case 115

Mrs. A. E., aged 21. January 25, 1915. Married one-and-a-half years. Helthy baby five months old. Not nursing. Menses regular. Since confinement, which lasted over two days and was completed by forceps, patient has had sticking pain in lower abdomen.

Diagnosis.—Cervix lacerated, slight thickening and tenderness of both tubes with slight tenderness of uterus.

February 6. Just over menses with severe pain.

February 8 to March 5. Nine treatments in twenty-six days. Entirely cured of pain, thickening and tenderness.

Examind July 30. Stil wel.

Case 116

Mrs. C. B., aged 37. Married sixteen years. Three children (two ded). No miscarriage. Menses started at thirteen; wer always irregular with severe dysmenorrhea before marriage. Her labors wer severe with considerable hemorrhage. Now menses appear every three weeks lasting three to six days. For one-and-a-half years continuous pain day and night on both sides of the abdomen low down. Has receivd all the usual forms of local treatment including baking.

March 9. Examination reveald a slight cystocele and rectocele, lacerated cervix, retroverted uterus and thickening of both tubes, great tenderness in both fornices and on stretching the uterosacral ligaments.

April 5 to May 10. Eighteen treatments with Quartz Light.

April 17. After eight treatments, thickening and tenderness in fornices had disappeard but there is stil slight pain when the uterosacral ligaments ar put on the stretch.

June 11. After twenty-five treatments patient is discharged cured.

August 1. Patient writes me from the west that "she never felt better in her life."

Case 117

Mrs. M. L., aged 26. July 28, 1913. Married a short time. Husband has gonorrhea. Miscarriage three months before; severe leukorrhea, frequent menses, pain in lower abdomen. Examination reveald a double pyosalpinx. Treated with hot-air douche, tampons, etc., with indifferent results.

November, 1913. I removed right tube and ovary, left tube injected but patent and allowd to remain *in situ* with its ovary.

November 19, 1914. Complains of severe pain on left side; remaining tube on this side thickend and tender.

April 18, 1915. No improvement.

April 18 to June 2. Thirteen exposures to Quartz Light. Discharged cured and has remaind so.

Case 118

Mrs. P. W., aged 24. Married three-and-a-half years. One child, forceps delivery; uterine packing; bleeding continued for four weeks. Six weeks after delivery (1912) pain in lower abdomen started and grew gradually worse.

November, 1914. Laparotomy. Was told that both tubes and ovaries wer removed, but has been menstruating regularly since operation.

June 1, 1915. Examination reveals tenderness of entire vaginal vault, tumefaction above right fornix and exquisit pain on stretching uterosacral ligaments.

Diagnosis.—Pelvic cellulitis, postoperativ adhesions.

June 25, 1915. After eleven treatments great improvements.

August 5, 1915. After twenty-nine treatments patient is discharged cured.

Dr. E. C. Shattuck, New Bedford, Mass., reports the following cases:

Case 119

H. Q., male, age 27 years. Presented *pityriasis versicolor* over chest, back and shoulders. The Kromayer Lamp was used at 6-inch distance, 10 to 15 minutes, without filter. Three treatments, July 12, 18, and August 4, wer followd by desquamation and disappearance of the eruption.

Case 120

A. E., male, age 30 years, had *eczema genitalis* with intense itching which was aggravated by the use of ointments. The Kromayer Lamp was used for 7 minutes at 3-inch distance without filter and a dusting powder was prescribed. Treatments wer given May 22, 29, June 2 and 17. The itching was entirely relievd and the case was symptomatically cured when last seen.

Case 121

Miss R. B., age 18 years, had *acne vulgaris* with comedones on face, back and chest, and seborrhea of the scalp. The Kromayer Lamp was used at 5 inches without filter, beginning at 5 minutes' duration and increasing to 10 minutes, at the same time decreasing the distance to 3 inches. This was an aggravated case and treatment was continued from March 17 to June 19 inclusiv, at intervals of five to seven days. The face particularly has improved remarkably and cleard of pimples—only an occasional small comedone being in evidence. The seborrhea is improving also under X-ray treatment in conjunction with the lamp treatment.

Case 122

J. L., male, aged 50 years, *nasal catar* and obstinate *herpes follicularis* of upper lip. Kromayer Lamp treatment was given May 1, 7 minutes at 3-inch distance, June 7, same, 10 minutes. June 13, same, 10 minutes, first epilating with forceps and using blue filter 2 mm with compression. June 21, same, 10 minutes. Patient was discharged cured.

Case 123

Miss M. B., age 20 years, referd by Dr. S., Diagnosis, *Psoriasis,* general outbreak. Treatment: Tonic internally, diet low in albumen. Prescription for ointment. Kromayer Lamp, distance 6 inches, without filter for 15 minutes at four points so as to cover most of the body surface. This patient was seen a week later improvd. No treatment was then given. Two weeks later she came in to let me know that the eruption had gone from all points where the light centerd and had nearly disappeard from all other places. She said she felt wel and did not need further treatment.

Case 124

M. S., male, age 10 years. *Alopecia.* Several large oval spots and numerous smaller ones diffused thruout the scalp. Treatment by the Kromayer Lamp 15 to 20 minutes without filter at 6 inches and later 3-inch distance. Seven radiations wer given dated April 10 to August 9, inclusiv. The result was excellent. Hair grew into the bald spots and the boy's general helth was improved.

Case 125

Mr. L., age 48 years, referd by Dr. R. Diagnosis, *lupus erythematosus.* The disease affected the left hand which had had daily treatment for nine weeks comprising local dressings and incisions. The case was sent to me in the hope of avoiding amputation. The eruption had partly disappeard from the middorsum of the hand, but was spreding abov the rist and activ on the sides, the thenar and hypothenar eminences being swollen, very painful and some pus remaining where incisions had been made. Thick yellowish tenacious crusts markt the more advanst eruption, while a bluish red color was shown where the newer infection was spreding. I used the x-ray at first with considerable relief of the pain, but no immediate check to the spreding. Then the Kromayer Lamp treatment was begun. The first treatment stopt the spreding and improvement was comparativly rapid. Distance, 2½ inches for 10 minutes without filter was the initial treatment and the time was lengthend subsequently to 20 and 30 minutes. A variation was also made using the filter with compression over the crusts and discharging spots. Treatments continued from May 14 to

August 10 inclusiv. Visits were at first daily or two days apart, the better to observ results, but soon wer extended to leave a week or ten-day interval between them. When last seen this patient was apparently wel. The effect of the light in this case was striking—a very painful serious condition being relievd and *cured* without scarring or deformity.

Case 126

Mrs. B., age 52 years, had *Flegmasia alba dolens* 21 years ago which ended in extensiv ulceration on both sides of the leg and has not yet heald. I report this case not as a cure but as an example of the effect of the light in securing helthy granulation on foul ulcerating surfaces. When first seen the ulcers wer the size of the hand on each side with a small ulcer between the two, all of them being one-half inch deep (deeper in the center), the edges slightly greenish and the surface very foul. The Kromayer Lamp was used June 5, for 5 minutes on each side at 3 inches without filter. Treatments wer repeated the same distance, but longer time up to finally 45 minutes. There was no untoward effect and the result has been a gradual filling in of the ulcers with helthy granulation to a level with the surrounding surface. There is a prospect of complete cure tho treatment wil be necessarily tedious. Seventeen treatments wer given—June 5, to Oct. 6, inclusiv.

Dr. Fred Wise, New York, givs the following report:

Case 127

I would like to mention a case of *post-operativ tuberculosis* which I cured with Quartz Light after trying everything possible in the way of drug applications, the x-ray and the brush discharge and the high-frequency effleuv. The condition would break down time and again until I used Quartz Light, and then it heald and has remaind heald for over a year. Patient has gaind in weight about 40 pounds and her general helth is perfect. She was treated from two to three times a week for about three months. Several times the reactions wer so severe that exposures would be interrupted for a week. Treatment was given with pressure against the tuberculous surface in order to dehematize the blood vessels.

In the treatment for *premature loss of hair* Quartz Light has proved to be a remedy of undoubted potency. In my hands I may say that in comparing an experience the preceding ten years to that of the past two years in the management of *premature alopecia* in both sexes I hav become imprest by the fact that Quartz Light exerts a powerful remedial influence in cases of this kind.

Dr. Wise reports also:

Case 128

Mr. X, age 60. *Suppurating tuberculous gonitis*. After making good progress with usual treatment he had a relapse, resulting in tuberculous abscesses, fistulæ, etc. It was only when Quartz Light treatment was introduced that reabsorption set in with vigorous reaction. All the fistulæ and abscesses hav now been cured.

Case 129

A patient, aged 60 years, with a blood pressure of 165 mm, an accentuated second aortic sound, complaind of pain in the big toe of the left foot for a period of six months. During the last three months a spot of *dry gangrene* had been present and the foot was edematous, the second and third toes sharing in the swelling and being immovable. The pulsation in the dorsalis pedis was absent. Operation had been advized. Quartz Light treatment was begun, the exposures varying in duration from two to eight minutes and wer made both anteriorly and posteriorly, the patient lying on his back and abdomen by turns. The distance of the lamp varied from one meter to seventy cm., and the treatment was given at intervals of from one to five days depending upon the pain and other symptoms. In the course of the treatment, the gangrenous spot separated, leaving a helthy granulating surface and the blood pressure was reduced. This reduction proved to be permanent. The pains wer greatly improved. Edema appeard several times during the two months of treatment, but receded in a few days when applications of Burrow's solution wer made. This treatment is of distinct advantage in beginning gangrene due to arteriosclerosis.

The followmg ar cases reported by wel-known physicians in various parts of the U. S. and from abroad:

Case 130

Mr. L. G., age 23. Has been troubled for many years with severe *asthma,* but recently has rapidly lost weight and developt severe night swets, also a bad cof accompanied by expectoration of abundant sputum containing a few tubercle bacilli. Treatment by rest and tonic did not improve him to any extent. He was then treated daily with increasing exposures to Quartz Light. Improvement was immediate; night swets and cof cleard up and râles could not be found after two months. Patient has gaind 12 pounds in this time and is feeling generally wel.

Case 131

Mr. C., age 60. *Soriasis.* Had formerly taken a course of treatment with salvs each year with good effect. Suddenly without apparent reason he no longer tolerated crysarobin, developing a very violent general erythema. A course with indifferent ointments brot no improvement. We made a casual trial with Quartz Light. Our success was striking; within 14 days the patient was discharged completely cured.

Case 132

Mr. X. Has had *soriasis* for a number of years, Sufferd intense itching and loss of weight causd by loss of sleep. In appearance it was a typical case, but there wer other indications of a seborrheic nature, only serum exuding when the scales wer scraped off. The first lesions wer very large in the small of the back. The itching indicated seborrheic dermatitis. On the other hand a dry, scaling eruption was present all over the body, including the scalp and on the nees and elbows. Large quantities of scales would fall from his clothes at night. The auto-serum treatment seemd to have no effect whatever. Previously I had used large quantities of isotonic sea water, but in this case it had practically no effect. Of course, he had the usual ointment of crysarobin, etc.

From the first, Quartz Light seemd to improve his general condition. I gave it daily at first, just avoiding a

severe reaction. Finally he took as much as 15 to 20 minutes at a distance of 18 inches, sometimes getting quite severe reaction which would last for a day or two. Treatments wer given two or three times a week. After two months of this there wer practically no signs of any of the original disease anywhere. His body is perfectly smooth, tho wel tand.

Case 133

Mrs. L. R., age 27. *Lichen planus.* Entire body coverd with lether-like skin with intense itching. The lesions wer very pronounst in the mouth which causd patient great pain when trying to eat. The eruption was of a copper-red with brownish tone, even to deep chocolate color in places and a few white scales. Patient was very nervous, sufferd from insomnia and had lost about 25 pounds in four months, appetite poor, general lassitude causd from exhaustion. Quartz Light was instald at bedside for treatment. December 23, general radiation 36 inches distant, 5 minutes; December 24, same treatment, increasing time to 10 minutes; December 27, same treatment, time 12½ minutes, distance 32 inches; December 30, time 15 minutes, distance 30 inches; January 6, time 17½ minutes, distance 28 inches; January 13, time 20 minutes, distance 26 inches; January 20, time 20 minutes, distance 26 inches; February 4, time 20 minutes, distance 24 inches. At this date no evidence of eruption on any part of body, and skin had resumed normal condition, except that it was wel tand. Patient feeling wel and excellent appetite, rapidly gaining weight. March 30, patient enjoying best of helth; stil gaining in weight; skin in excellent condition.

Case 134

Mr. H. S. Age 32. *Alopecia-areata.* Had been increasing progressivly for six months. One bald spot mesured 4 inches in diameter and another 2 inches. Various treatments seemd to be of no avail; scalp seemd normal but pale in color. There was no evidence of ring worm or infection; diagnosis of *nervous alopecia* was made. First treatment on June 14 with Quartz Light 35 minutes duration, distance 7 inches. Second treatment June 19, same distance, 40 minutes. Third treatment July 9, same. Considerable reaction followd each exposure. Recently patient was

examind and showd no signs of alopecia, having a helthy growth of hair over the entire scalp.

Case 135

Mrs. W. A. Age 59. She has had *eczema* since she was four years old. Had been treated more or less all her life. There was scarcely a part of her body that was not affected. Her right hand was blisterd, crackt and bleeding. Her face was coverd with vesicles as wer her feet. June 23 she was given a 4-minute treatment with Quartz Light. Her next treatments wer June 24, 29, July 3, 6, 10, and 14, at which time she was blisterd badly and so had no further treatments until August 3. Another was given August 9, and the last August 18, at which time she was free from eczema. No local treatment of any kind was used.

Case 136

Mr. M., age 30. *Post luetic lesions* of the skin. Treated with Quartz Light November 28, 10-minute exposure, distance 10 inches; December 16, same treatment; January 2, same treatment. Many lesions heald and the skin smooth and clear. January 16, same treatment; March 5, same treatment; April 2, same treatment; April 12, completely heald; skin clear except for a few old scars.

Case 137

Mr. B., age 24. *Soriasis* principally on the scalp. Scalp exposed to Quartz Light, parting hair along exposure of 5-inch distance, 40 to 50 minutes, at each sitting. December 2, first exposure, 40 minutes, 10 inches; December 27, 45 minutes, 10 inches; January 3, 40 minutes, 10 inches; January 18, 60 minutes, 10 inches; scalp very nearly cleard except for one or two places. February 9, scalp clear from the fine desquamations and lookt perfectly smooth. Patient discharged.

Case 138

Mr. E., age 17. *Acne and dermatitis* due to gastro-intestinal disturbances. He was treated with four exposures of Quartz Light January 16, 15 inches, 15 minutes. February 17, 15 inches, 10 minutes; March 19, 10 inches, 10

minutes; April 9, face cleard except where some pustules had been opend by galvanic cautery at beginning of treatment.

Case 139

Mr. R., age 33. *Dermatitis* on hands and cervical regions and a patch of eczema in the region of the coccyx about the size of the palm of the hand of several years' standing and of a dry form, hard and crusty. Treated with Quartz Light. First treatment February 26, 20 inches exposure over hand and cervical region, 10-inch exposure over eczematous patch; time, 10 minutes. March 20, 15-inch exposure over hands, 10 inches over eczematous patch, time, 10 minutes. Both wer clearing up from the first treatment. April 9, hands and cervical region wel and sacral region was perfectly smooth.

Case 140

Mr. B., age 45. *Dermatitis* over forehed, eczema on left leg and thigh. Treatment with Quartz Light March 12, 20 inches over forehed, 10 inches over eczematous patches, time 10 minutes. March 20, 15 inches over forehed, 10 inches over eczematous patches, time, 10 minutes; March 29, 10 inches over forehed, 10 inches over eczematous patch; results good; desquamation and clearing up nicely. April 12, 15 inches over forehed, 10 inches over patches; April 20, forehed clear and smooth; one small patch the size of a dollar remaining on thigh, which was given a 10-inch exposure. All these exposures wer given 10 minutes.

Case 141

Mr. L., age 30. *Pleurisy* of left side. Treatment with Quartz Light, February 5, 10-minute exposure, 10-inch distance, causing blood formation. Patient reported relief after third day.

Case 142

Miss F., age 26. Birthmark involving right cheek, ear, neck, and forward as far as tip of the chin. Was of deep red color, tissues and skin wer several times normal thickness; she had various forms of treatment without success, including carbon dioxid snow, electric needle, and ac-

tual cautery. Treatments wer begun with Quartz Light April 5, one exposure being given each month. Two m.m. blue quartz lens was used as a filter. Time of each treatment was 60 minutes, firm compression being used. A portion of the birthmark has entirely disappeard. The remainder has improved 80 per cent, and undoubtedly complete recovery may be expected after a few more treatments.

Case 143

E. I. D., age 20. *Tinea tricofytina* of four weeks' duration. Right side of face from lower maxilla to clavicle and beyond the median line both anteriorly to posteriorly was a mass of scabs and abscesses. Of the latter I opend 60. April 26 gave a 9-minute exposure under Quartz Light; on April 27 a 20-minute exposure at which time I removed the scabs. It had been spreding a half inch a day before he came to me. The first treatment stopt the spreding and at the end of the first 24 hours the edges wer retracting. April 28 I gave a 12-minute exposure and on the following day an 18-minute exposure. Following this he had six more treatments, when he was dischargd as cured. No other treatment was used.

Case 144

M. S., male, age 10 years. *Alopecia.* Several large spots and numerous smaller ones diffused thruout the scalp. Treatment by Quartz Light 15 to 20 minutes without filter at 6 inches and later 3-inch distance. Seven radiations wer given dated April 20, to August 9, inclusiv. The result was excellent and hair grew into the bald spots and the boy's general helth was improved.

I hav treated fifty-three cases with the Quartz Light, 29 cases of sciatica, 3 cases of neuralgia plexus brachialis, 5 cases of neuralgia intercostalis, 6 cases of arthralgia and 3 cases of lumbago. In 35 cases I affected a cure, 15 cases resulted in considerable improvement, while the remaining 3 cases wer not alterd.

The Quartz Light has given me excellent results with neglected ulcers, enclosed by a firm callous infiltration, which do not lose their torpid caracter and wil not vascularize. The use of the Quartz Light for ulcers has alredy been briefly recommended by many, but in my opinion insufficient stress has been laid upon its most favorable action.

I used the Quartz Light in one case of excessiv menorrhagia the flow of blood ceast almost entirely in the midst of the regular time, for two days after radiation of the abdomen and the lumbar region and then continued for the rest of the time in diminisht intensity. The obstipation existing for years disappeard in a short time.

THE QUARTZ LIGHT—NEW TECNIC AND CONCLUSIONS

I think any intelligent physician after having red all the foregoing regarding this modality wil be convinst that in the Quartz Light we hav a remarkable therapeutic agent.

As I am an enthusiastic exponent of powerful-incandescent-lamp therapy, and as I am wel fitted up for fototherapeutics, I began experimenting to ascertain the effects of powerful-incandescent-light energy and the quartz-light energy in combination. The following ar my conclusions in this respect:

I found that if the powerful incandescent light is allowd to radiate over the body for from 10 to 20 minutes, or until there is a profound hyperemia of the skin, and then the patient is exposed to the actinic rays from the quartz lamp for from 1 to 7 minutes as the case may be, results ar obtaind that I hav never seen equald with either one of these modalities alone. The reason for this I believe is that when the surface capillaries ar dilated by the powerful incandescent light, the quartz light is able to produce chemical changes in the blood much more effectually and much more quickly.

Dr. T. Howard Plank of Chicago, was the first one to call my attention to the beneficial effects of combining the effects of these two modalities. At first I could not quite understand his findings, because I was of the opinion that the powerful incandescent light would not hav as good an effect upon the body after it was pigmented by the quartz light as it would hav without this pigmentation; but from actual experience I found the reverse obtains. The efficacy of both modalities is enhanst by using them one after the other, or both together beginning with the incandescent lamp. The same finding holds true in either skin diseases or in the rectifying of faulty metabolism. Therefore, I

advize all users of the quartz light to also instal incandescent lamps of from 1,000 to 1,500 amperes (the Sunbeam preferd), arranged in a suitable reflector, to be used in conjunction with the quartz light.

I might ad that when these two forms of light ar used as abov indicated I seem to obtain results similar to using the powerful incandescent lamp and oxygen vapor—one following the other. I would not advize the abandoning of oxygen-vapor therapy when using these two lights, but mention this as a fact. I believe the reason is that we ar rapidly ozonizing the blood by the quartz light after a profound surface hyperemia has been produced by the powerful-incandescent lamp. A similar ozonizing of the blood is produced by inhaling *properly* produced oxygen vapor. My hypothesis may be wrong in this respect but clinical findings seem to bear out my conclusions.

The following is a very remarkable case that has very recently come under my observation.

Case 145

Single man, 38 years old. Referd to me for diagnosis. He gave an MM VR indicating auto-intoxication. Upon examining him carefully I found that his buttocks wer coverd with small pustules like acne and fild with yellow pus.

Upon inquiry, it seemd that he was referd to me for diagnosis as syfilis was suspected. The case did not resemble syfilis, and the Bio-Dynamo-Chromatic findings wer contrary to syfilis, because it took only a few days to clear his bowels out, after which he gave a normal MM VR.

At first I concluded this trouble came from a relaxt condition of the mucous membrane of the colon, so I commenst treating him with the powerful incandescent lamp and the pulsoidal current past thru my bi-polar rectal electrode in the rectum. After three or four treatments the pustules did not clear up and it occurd to me that this was a good case on which to use quartz light. I gave the man radiations from the powerful-incandescent lamp for about five minutes, then anointed the buttocks with iodex with methyl salicylate and allowd the radiations from the lamp to continue for 20 minutes more. Then I put him under the quartz light 30 inches distant for 4 minutes. I gave this length of exposure with the quartz light because he was of the type that would not tan easily.

The second day after he came for another treatment and told me that he had had a little difficulty in sitting down as he felt as tho his buttocks wer pretty wel sunburnd. Upon examination I found that he had judged correctly. I repeated the same treatment and the second night after he came again. To my astonishment every pustule had disappeard and nothing but scaling of epidermis was evident. As he was quite stout, I lifted up the gluteal muscles and found that in the gluteal folds wer pustules where the light had not reacht. This proved conclusivly that it was the light in connection with the iodex that so rapidly cleared up the skin where the light could reach it.

I then treated him again, holding the gluteal folds open so as to allow the light to strike on that region. One more treatment in this manner cleard up the buttocks so that not a sign of a pustule or pimple could be seen.

Under ordinary treatments, such as I hav been accustomd to use, I should expect to take from three to six weeks to clear up these pustules.

Case 145a

Lady aged 35. Mass of ring worm patches on the shoulder and neck reaching up into the hair. At first it appeard like herpes zoster only the pustules coverd a greater extent.

I gave this lady radiations from the 3,000-candlepower light for about 5 minutes and then applied the quartz light from the Kromayer lamp without any special applicator, distance 2 inches for 2 minutes, then compression radiation 1 minute. I did this over the entire area. The reaction was very markt.

The next day I anointed the burnd area with iodex and coverd it with cotton. I gave no more raying but kept it coverd with iodex and cotton. On the second and third days the blisters opend and on the fourth day I rubd the loose skin off, keeping it wel anointed with iodex. This was the only treatment I gave, and it cleard up the whole condition. In two weeks' time the area was clear and smooth.

Case 145b

Lady aged 50. Brachial neuritis on the right side. I treated her with radiations from the powerful incandescent lamp twice a week for several weeks without any satisfactory

results. I did not use the quartz light as it was occupied all the time and I thot I could cure the case without it. I then began using the quartz light in conjunction with the incandescent light after having applied the incandescent light for about 10 minutes. Then radiated the rays from both lamps simultaneously on the shoulder for from 3 to 7 minutes, increasing the time about 2 minutes at each treatment, giving treatments every other day. Distance of quartz light from the body 36 inches.

After the sixth treatment the shoulder was entirely wel. The patient said it was the first time she had been free from pain in the shoulder for several months. She also said that she felt relievd from all pain within two hours after the first radiation from the quartz light. Notis that I used the quartz light and the incandescent light simultaneously.

Case 145c

Man aged 60. Circumflex neuritis of nearly a year's standing. He was not able to use his arm to put on his coat. I used the powerful incandescent lamp over the area for about 10 minutes and then added to it the quartz light, using the two simultaneously. I commenst with a 3-minute exposure at 36 inches with the quartz light and increast the time daily from 1 to 2 minutes until he could take 8 minutes with the quartz light without any blistering.

After the fifth treatment he was able to put on his coat and use his arm quite redily. He then said he was so wel that he thot he needed no more treatments and went back home.

I am sure that I could not hav accomplisht these results with the incandescent lamp alone in this short space of time, and perhaps not at all.

Case 145d

Lady aged 55. Complaind of edema in the upper eyelids every morning to such an extent that she could not open her eyes without manipulation. This trouble had come on gradually and she used all sorts of ointments every day without any good effect.

I used the incandescent lamp over her body including her face and eyelids, letting the light radiate over the face and body while her eyes wer closed. After three weeks of

this treatment she reported no beneficial results as far as her eyes wer concernd but she felt better generally.

This lady's urin showd nothing abnormal but she had an aneurysm of the abdominal aorta. I instructed her to put a four-inch lift under the legs at the hed of her bed, and continued the incandescent light treatment for another week, giving treatments every other day, but while her general condition was much improved the eyelids stil botherd her very much. I then used the quartz light in conjunction with the incandescent light, commencing with a 3-minute exposure 36 inches distant, and increast 1 minute every other day until I gave 10 minutes with the incandescent light alone and 10 minutes with the quartz light in conjunction with the incandescent light.

After the second treatment with the quartz light she told me that she notist an improvement and after the fifth or sixth treatment she told me that her eyelids wer entirely wel. I never saw a case exactly like this before, so do not know just what was causing this palpebral edema. One would naturally think it came from some abnormal renal condition but tests did not show it. I think the cause was the aneurysm, and strange to say, this treatment lessend the aneurysm to such an extent that one could hardly find it. I had no idea of reducing that when I commenst this treatment. I had her strip to the nees during each treatment.

At the present time, several weeks since this case was recorded, the aneurysm has all disappeard, the bruit cannot be detected, and what was before a bounding enlargement in the abdomen has now entirely disappeard. I do not know how it has been accomplisht, but facts ar facts, and I am relating this case to show what the quartz light wil do even when we do not expect it.

Case 145e

Lady aged 53. Asthmatic attacks so bad that she could not lie down in bed. Had sat up in a chair for several weeks. When she first came to me for treatment, she was afraid to lie on the table, so I tilted it in a reclining position and radiated the incandescent light on her bare chest and abdomen for 10 minutes, following with the quartz light in conjunction with the other for about 2 minutes, and the same on the back. I increast this every other day 2 minutes for the quartz light until she could take 6 minutes of the quartz

light along with the incandescent light. After the first treatment she was able to lie flat on the table and slept all night lying flat in bed.

After the third treatment the asthmatic seizures had entirely ceast and an old bronchial trouble that she had had for years cleard up very much. She is stil under treatment.

This lady had been using some narcotic preparation for years to reliev her asthma. She has not taken any now for seven weeks and has been without any return of the asthmatic attacks.

Case 145f

Married lady aged 40. Complaind of globus hystericus and itching sensations all over the body. By the B-D-C method I diagnosed her as suffering from nicotin intoxication. She admitted that she was addicted to the cigaret habit.

She promist that she would not smoke any more, and I put her on a starvation diet for two days, telling her to drink quantities of water and take a large dose of epsom salts two or three times during the day. This I think she carried out to the letter. I then commenst treating her with incandescent light 10 minutes front and back without the quartz light and then added the quartz light 36 inches away. I used this 3 minutes along with the other light and increast this daily 2 minutes until she could take 8 minutes of the quartz light without blistering.

After the first treatment she began to sleep better, and altho the globus hystericus continued, her itching sensations subsided. During six weeks she has had six treatments. Now her general condition is better than it has been for years and her indigestion, formication, and globus hystericus hav practically subsided, so much that both she and her husband say that she is like another person.

Altho I hav had similar cases, I hav never had them respond so quickly as this, and I attribute it to the effects of the quartz light.

Case 145g

Lady aged 60. Was brot to me for diagnosis as plans wer being made to take her to a sanitarium because of melancolia and suicidal mania. She gave an *H*-MM VR and a slight *No. 105*-MM VR. I askt her attendant if she had

lived with anyone who had had epilepsy. The patient, hearing this, broke down and sobd for nearly an hour. I found that her dauter had been taken to an institution for epileptics and that it was living with this dauter and grieving over her that had brot on her condition. This shows the remarkable effect of living with someone having a nervous disease and it also shows how correctly the B-D-C can diagnose such a condition.

This lady was on a vegetarian diet so I could not improve on that. I commenst treating her with the powerful incandescent light and the quartz light along with oxygen vapor. She had one attack of melancolia during the first week, but for five weeks following she has had no more attacks, has gaind in weight and to all appearances is getting wel. She is stil under treatment but I hav never been able to accomplish such results in such a length of time by any other treatment.

The length of exposures wer 12 minutes with the incandescent lamp alone, radiating over the body from the nees up both anterior and posterior. I began with 3 minutes with the quartz light in conjunction with the incandescent light and increast it gradually until she could take 8 minutes with the quartz light along with the other. Her body is much tand and she says she now sleeps all night without any opiates, something she had not done before in nearly a year. She has no special attendant and her husband says that he considers her practically wel at the present time. Of course I do not know whether she wil have a return of the trouble, but mention the case to show what the quartz light wil do in such a neurotic condition.

Case 145h

Lady aged 33. Old eczematous patch on the leg about the size of a silver dollar, which had been there for several years altho she said she had used all kinds of ointments to no avail. One treatment of the quartz light thru the Kromayer lamp 2 inches distant, 2 minutes, then compression 1 minute, cured this condition. The reaction was quite severe but it did the work and the patient was very much elated.

Case 145i

The following case wil show what the quartz light wil do for dandruf, and no suggestion about it either. I was

treating a man for impotency with the powerful incandescent lamp and the quartz light. The radiations wer given over the whole body, following out the combined treatment of the incandescent light and the quartz light. Radiations fel upon his hed as wel as other parts of the body. After daily treatments for a month, he askt me if that treatment would help dandruf and falling hair. I said I thot it would. He said that when he started treatment his hed was ful of dandruf and every time he washt his hed quantities of hair would come out. He said at the present time he has no dandruf and no hair comes out when he washes his hed. After he told me this I inquired of other patients and found that it was doing the same with them, that is, stopping the falling hair and curing or inhibiting dandruf.

In conclusion I wish to caution all users of the quartz light to not become too enthusiastic over it at first and giv too long exposures. Go easy. Start with under exposures rather than over exposures. After a little practis the operator wil become accustomd to the type of individuals who do not easily tan and wil very redily know how to judge his distance as wel as time of exposure.

Do not make the mistake of thinking you can treat nevi, lupus, pus tubes, pus appendicitis, rodent ulcers, etc., as effectually with the Heraeus lamp as with the Kromayer, because you cannot. For such conditions the Kromayer lamp should be employd, using such lenses as ar suited for the work.

For cystitis as wel as irritations about the urethra, the Kromayer lamp with the long pencil-quartz applicator produces results that cannot be obtaind by any other agency.

For treating gonorrea in the anterior part of the male urethra the Kromayer lamp with the pencil-quartz applicator produces remarkably good results.

For treating the female genitals to destroy infection about the glands, the quartz light from the Kromayer lamp and suitable quartz lenses is without doubt the very best modality known at the present time.

I think with the illustrations herewith given showing tecnic, any careful operator wil be able to do work with the quartz light that wil be a plesure to both patient and physician.

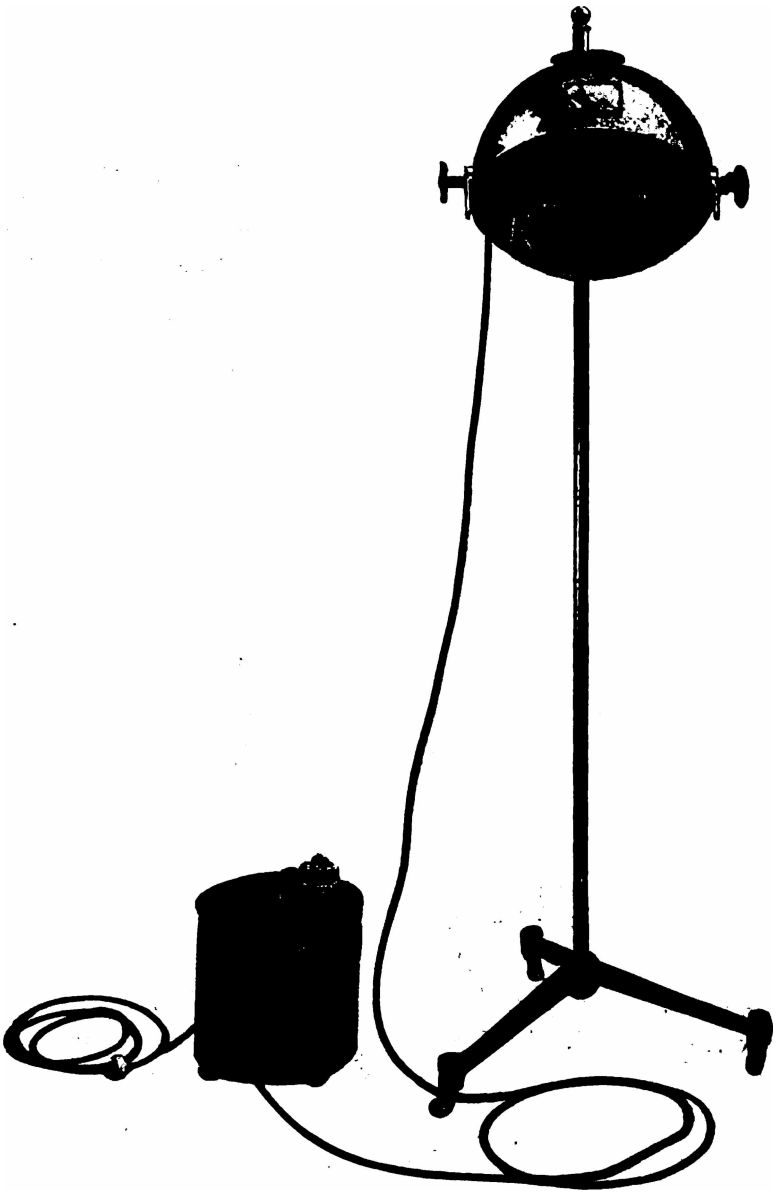


Fig. 177. Showing the Heraeus Alpine Sun, Quartz Mercury-Vapor Lamp for giving the air-coold Quartz Light with an alternating current. M'f'd by Hanovia Chemical & Mfg. Co., Newark, N. J. The "drum" on the floor is a special transformer used with the alternating current. The burner used in this lamp is shown in Fig. 179.

Fig. 178. Showing another view of the Heraeus, Alpine Sun, Quartz Mercury-Vapor Lamp.

THE QUARTZ LIGHT AND TECNIC ILLUSTRATED

Fig. 177 is an illustration of the latest style Heraeus Alpine Sun, Quartz, Mercury-Vapor Lamp to be used with the alternating current.

Fig. 178 another view of same.

Fig. 179 shows the alternating current burner for the Heraeus Alpine Sun Lamp. A description of this burner in connection with the reflector shown in Fig. 180 is given with the illustration.

Fig. 180 shows the under side of the reflector with the burner in place. It also shows the tilting mecanism as wel as the reverse or inside of the selectiv shutter. It is very

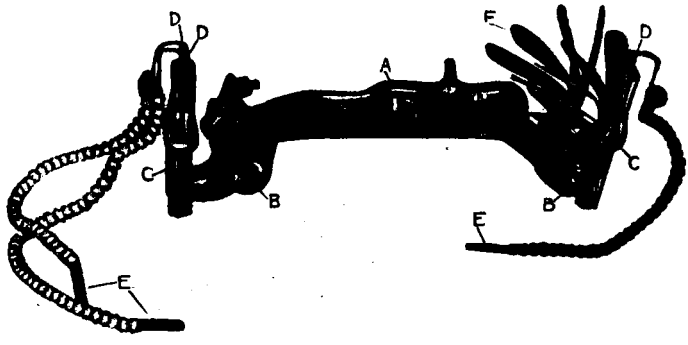


Fig. 179. A. C. Burner for the Heraeus Alpine Sun Lamp. *A* represents the mercury-vapor-arc tube, which is 5½ inches long, with two positiv electrodes and one negativ electrode *D*.

B, B ar two transverse mercury containers.

C, C ar two electrode vessels. These ar of pure, transparent fused rock crystal. The current is conducted thru the lamp by ground-in, mercury seald electrodes *D,D,D,* to which the leads *E,E,E* ar attacht. These leads ar made of flexible metal and ar insulated with porcelain beads.

Fan-shaped metal coolers, *F,* ar mounted on the mercury container at the negativ pole and serv to diffuse the generated heat, thus regulating the current density and to a certain extent the intensity of the light.

The burners ar mounted into the lamp body, shown in Fig. 180.

This lamp body consists of two hemisferical reflectors of highly polisht aluminum, as shown in Fig. 180 and some of the other figures.

A hand wheel *I,* Fig. 180, is attacht to this lamp body or hood, which permits the tilting of the burner from the horizontal into the inclined position. This tilting causes the mercury to make metallic connection in the arc tubes, thus allowing the current to flow thru. Upon allowing the burner to come back into the horizontal position, the arc is struck, filling the whole of the arc tube with a luminous mercury vapor. Sometimes it is necessary to tilt this burner several times before the arc wil be struck. This is owing to a peculiarity of the alternating current.

seldom now that this selectiv shutter is used, especially if one has a Kromayer lamp for localizing radiations.

This selectiv shutter contains a safety window thru which one can safely view the mercury vapor arc.

The Quartz Light Burners ar made of fused rock crystal. It required years of reserch and experimental work to make it possible to perfect a process for fusing this extremely refractory material into a homogenous mass and work it up in a special blow-pipe flame under a temperature of about 1630° C.

This quartz is almost completely transparent to the ultra-violet rays and as it can be heated to such a very high temperature without danger of injury, it has been possible to

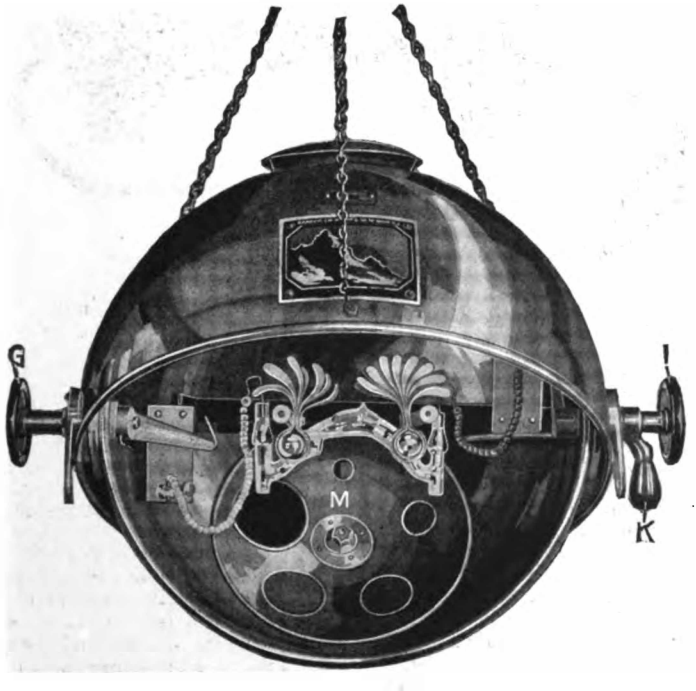


Fig. 180. Heraeus Sun Lamp with reflector lowerd to show burner-tilting mecanism and reverse side of selectiv shutter. *I* is the tilting nob and *K* is the lock nut for same. *G* is at one end of the burner holder. *M* is the selection shutter.

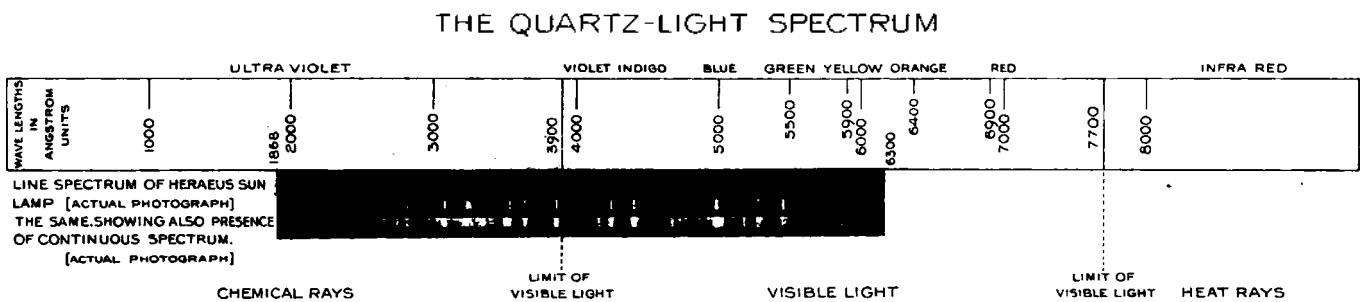


Fig. 181. Showing the Quartz-Light Spectrum. This is a beautiful actinic, or chemical-ray spectrum. It is self-explanatory.

construct burners of great power which ar at the same time economical in current consumption.

Mercury, which has a vaporizing point variously estimated between 600° and 1000° C, is used to produce the

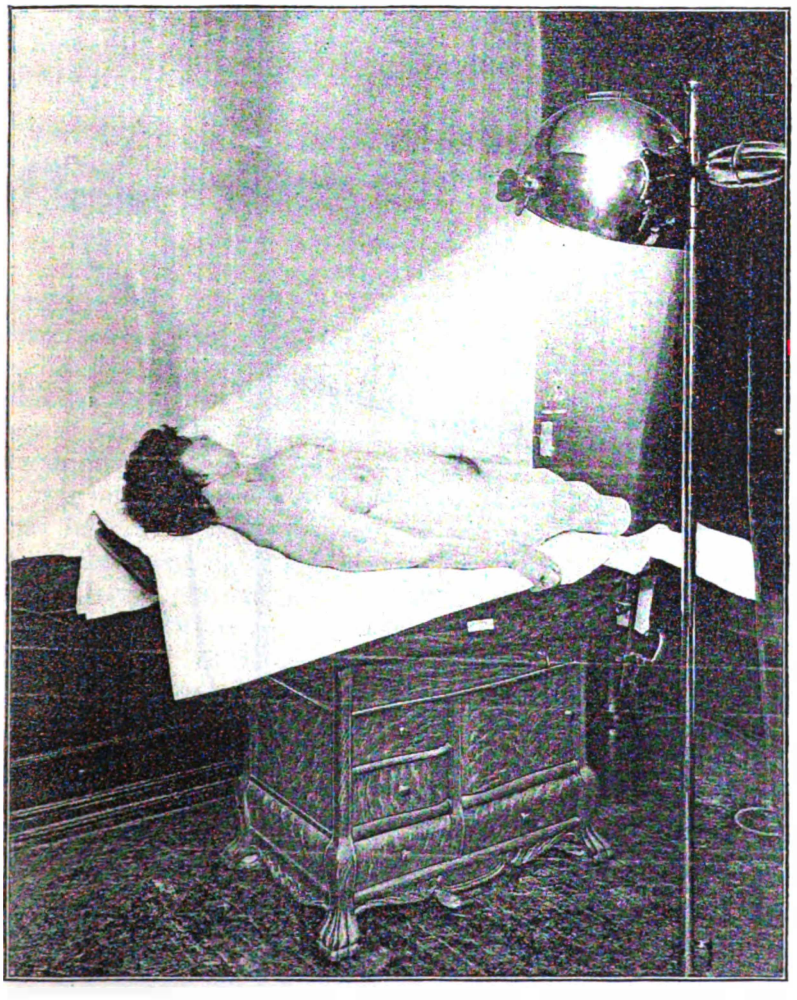


Fig. 182. Showing the tecnic for using the Quartz Light over the entire body. Notis that a time-clock switch is used, so there can be no danger of an over exposure. If an attendant is constantly present a regular time clock can be used and not the clock switch. (This is a corner of one of the author's treating rooms.) Notis that the patient is nude except the feet. If for any special reason the feet need actinic raying, of course the stockings must be removed.

Fig. 183. Showing the A.C. Kromayer Lamp, M'f'd by Hanovia Chemical and Mfg Co., Newark, N. J. (Water cooled, Quartz, Mercury Vapor Lamp for giving Quartz Light thru quartz lenses or applicators.) The two tubes attacht to the lamp carry running water to and from the burner. The light from this lamp passes thru water and quartz. The "drum" on the floor is a transformer made specially for this lamp. The lamp can be removed from its carriage or the carrying rod can be raisd or lowerd and made fast at any desired height.

electric arc. This electric arc is a Heraeus modification of the Cooper-Hewitt Mercury-Vapor Light.

The candle power of the various quartz light instruments varies from 1,500 on a 110-volt direct current to 7,000 on a 500-volt current. The type most generally used is that of a 110-volt alternating current, 60 cycles, which generates about a 3,000 candle power light.

The A.C. burner draws about the same current as a 1,500 watt tungsten lamp—11 to 11½ amperes. When beginning to arc it draws about 15 amperes, but that is only for one or two minutes.

Fig. 181 shows a remarkable quartz light spectrum.

Fig. 182 illustrates the tecnic for radiating the quartz light over the entire body at one time. This is the proper tecnic for general treatments.

In my offis I radiate light from a 3,000 candle power incandescent lamp over the body from 5 to 10 minutes before exposing the same surface to the quartz light. I think metabolism is enhanst by this procedure.

It must be rememberd that the more hours the quartz light burner is used, so much longer wil it take to bring about the same erythema or tanning that is required with a new lamp. As far as I can figure, each month's use of the quartz light burner, averaging four or five hours a day, diminishes the speed about one minute. Thus it wil take about one minute longer to produce the same effects with a burner that has been used 125 hours than it wil with a new burner. Once a year these burners should be sent back to the factory to be cleand, after which they ar the same as new.

It is very important that this point is rememberd because one who has been accustomd to using a lamp that has been used a year or more is liable to burn the patient when he uses the cleand tube, unless he understands this condition, because he wil use it too long.

The Kromayer Lamp

Fig. 183 shows the Kromayer Lamp for the alternating current.

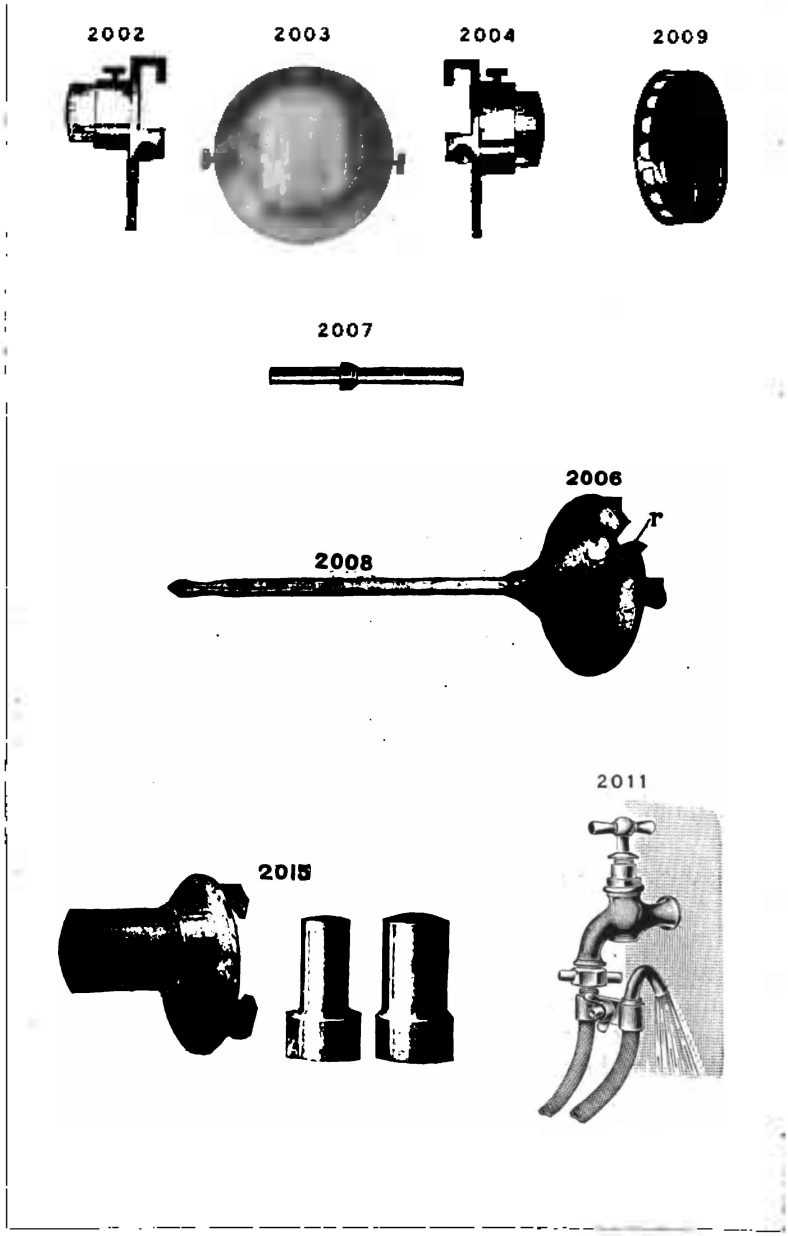


Fig. 184. Applicators and accessories for Kromayer Lamp.

Fig. 184 shows some of the regular applicators and accessories used with the Kromayer Lamp.

No. 2002 is a small, round, quartz lens applicator.

No. 2003 is a large, square, quartz lens applicator.

No. 2004 is a medium, round, quartz lens applicator.

No. 2007 is a quartz rod 2¾ inches long with a strait end.

No. 2008 is a quartz rod (quartz-pencil applicator) 6¾ inches long with a shaped end.

No. 2009 is a blue ultra-violet glass filter. These ar made in thicknesses of 2, 3, 4, or 5 millimeters.

No. 2015 is the Sharpe localizer with three tubes. These ar for localizing the rays over any given area.

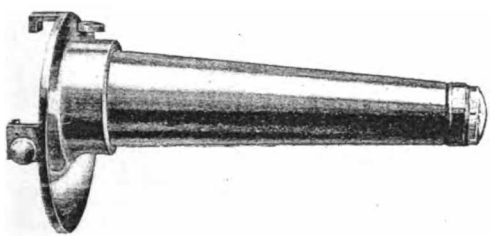


Fig. 185. The Plank Quartz-Light Applicator for Vaginal or Faryngeal treatments.

No. 2011 is a nickel-plated water faucet with tube connection and holder. These can be attacht to the regular basin faucet pipe so they can be used independently of the basin faucets.

The water must flow thru the Kromayer lamp burner continually while the current is on. Otherwise the burner wil be destroyd.

Fig. 185 shows the Plank, quartz-light applicator for directing the rays against the tonsils or farynx or any part of the buccal cavity. It can also be used thru a speculum for treating the cervix uteri or any of the parts in the vaginal cavity.

Fig. 186 shows the tecnic for treating pruritus vulvae. This same tecnic can be used for treating about the external genitals and anus for pruitus ani. Probably this treatment cannot be exceld.

Fig. 187 shows the tecnic for treating cystitis thru a quartz-pencil applicator. With a short quartz rod or appli-

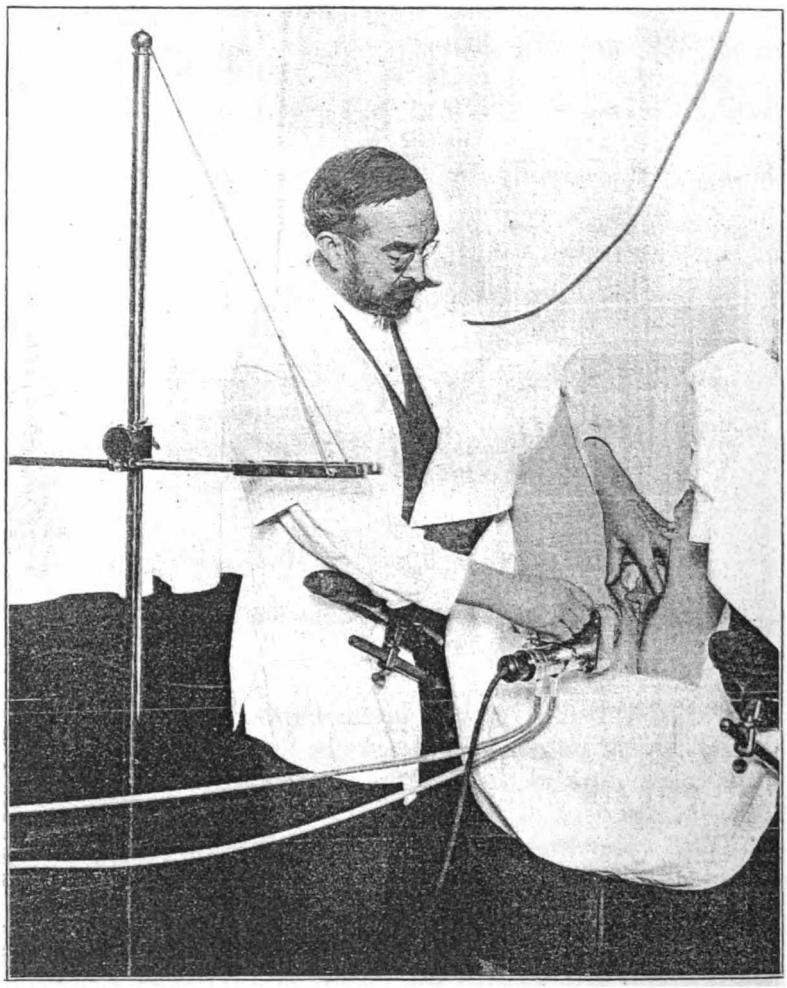


Fig. 186. Showing the tecnic for treating Pruritus Vulvæ with the Quartz Light. This same tecnic can be used in treating any part of the female external genitals and about the anus. The lens is about 6 inches from the mucous membrane.

cator, localized lesions about the external genitals can be treated.

Fig. 188 shows the tecnic for treating the cervix uteri thru a speculum. A suitable applicator, such as the Plank applicator, is used for this purpose.

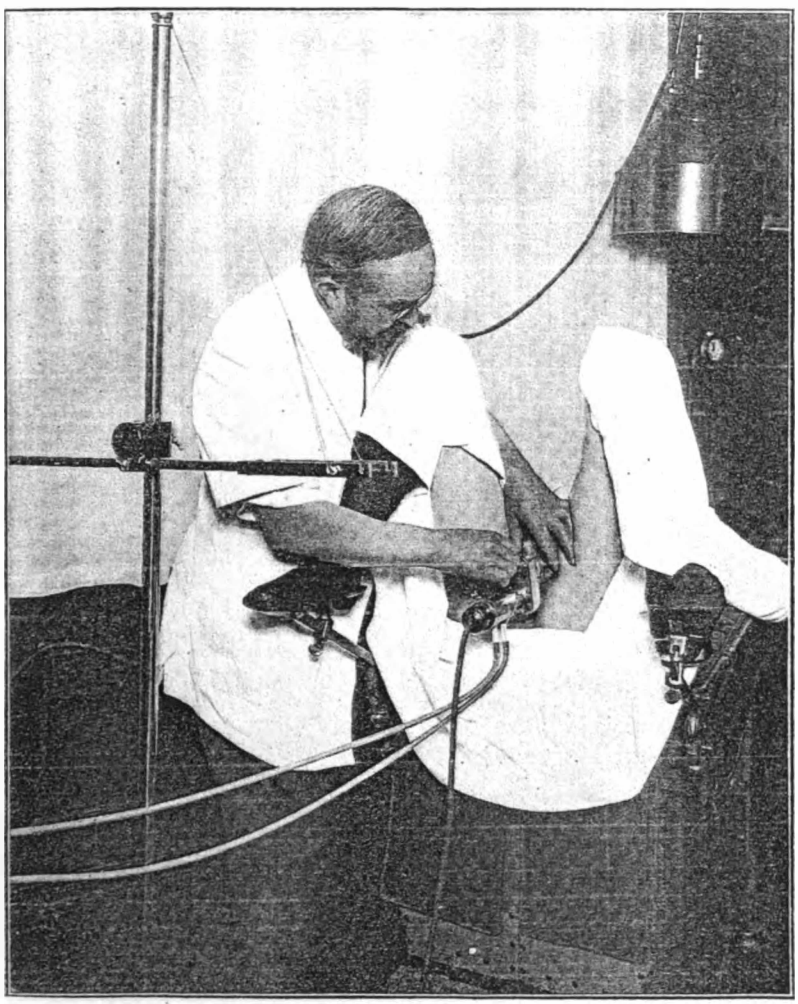


Fig. 187. Tecnic for treating Cystitis thru a quartz pencil applicator. This applicator is past into the urethra and up into the bladder. This same illustration shows how to use the shorter quartz pencil applicator for localized conditions about the vulva or anus.

Fig. 189 shows the tecnic for compression radiation with the quartz light. When the area to be treated is larger than the applicators, several succesiv applications must be

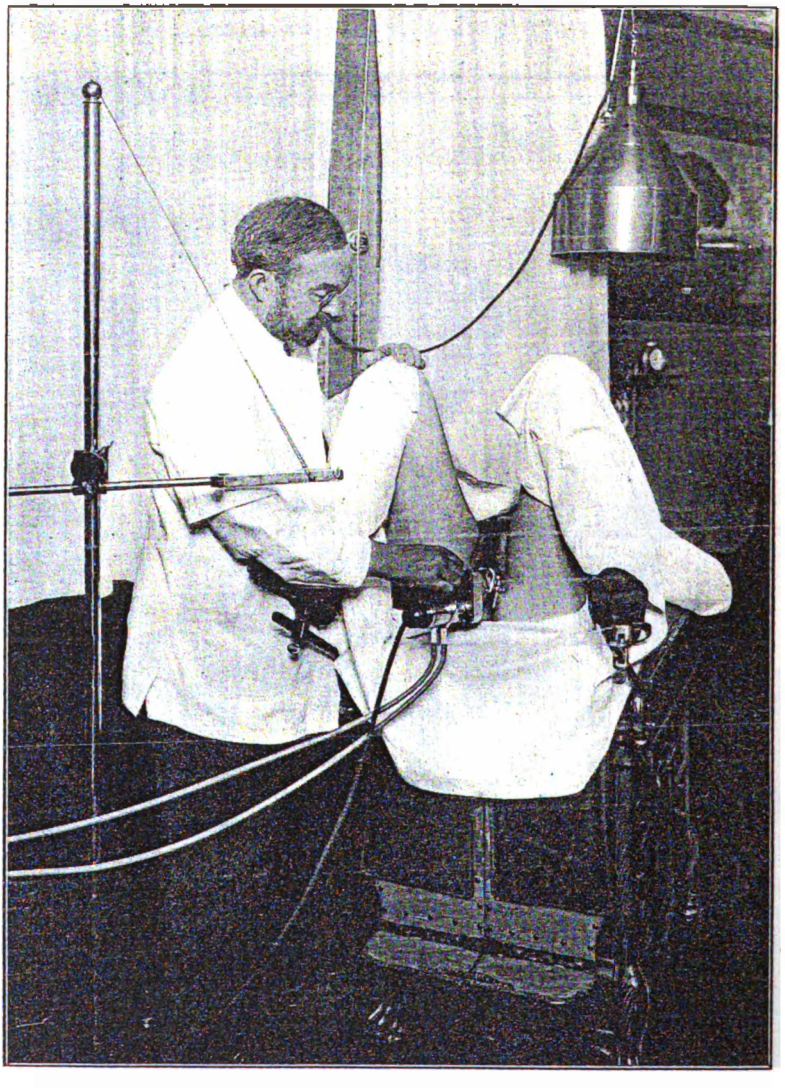


Fig. 188. Showing the tecnic for treating the vagina or os uteri or uterus thru a speculum with the Quartz Light. Any suitable applicator or quartz lens can be used. (A corner in one of the author's treatment rooms.)

made, leaving about an eighth of an inch between each point of contact on each side.

Fig. 190 shows the tecnic for localizing thru the short quartz-rod applicator, compression radiation over an epi-

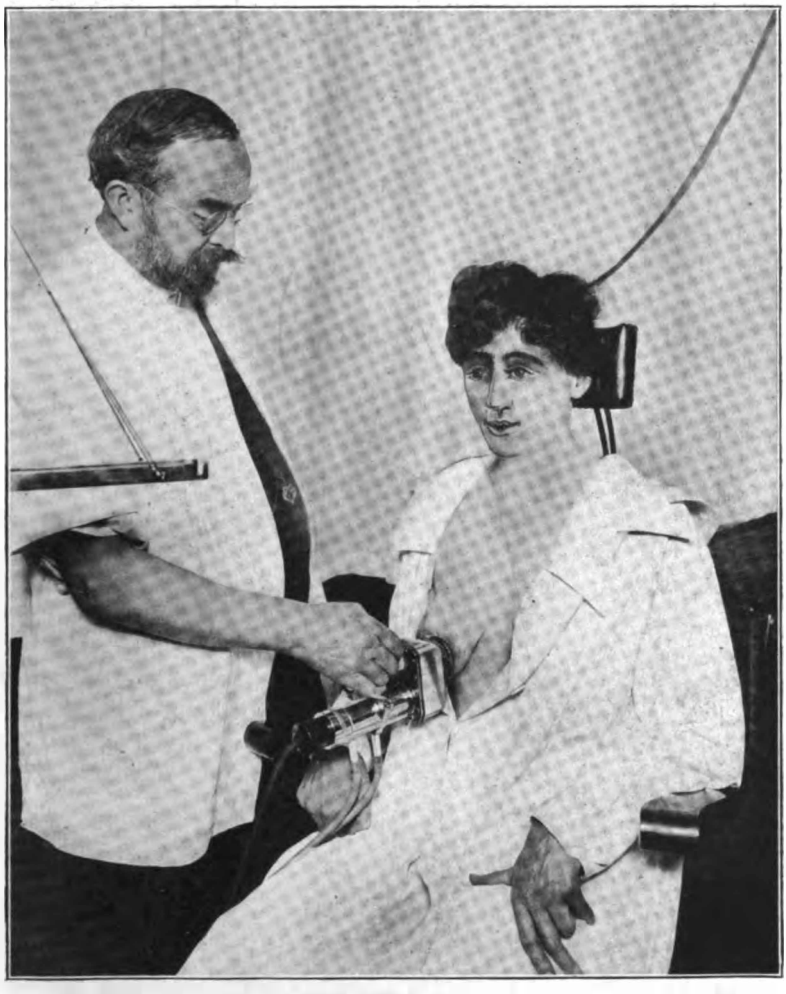


Fig. 189. Showing tecnic for compression radiation with the Quartz Light. This compression produces a local dehematization, which allows the actinic rays to penetrate into the deeper tissues. The quartz lens used should be just a little larger than the area to be rayd, if the area is a small one. For an area larger than any of the lenses, several adjoining (not over-lapping) "attacks" must be given, each one of a little less duration than for only one attack.

thelioma situated on the under lip. It is with this rod and with a similar tecnic that treatment can be given thru the anterior nares. The long quartz-pencil applicator can also be used in the nasal and buccal cavity.

Fig. 191 shows the tecnic for compression radiation, the lamp being held on its stand, and the hed of the patient resting against a detachable hed rest. The type of Kro-

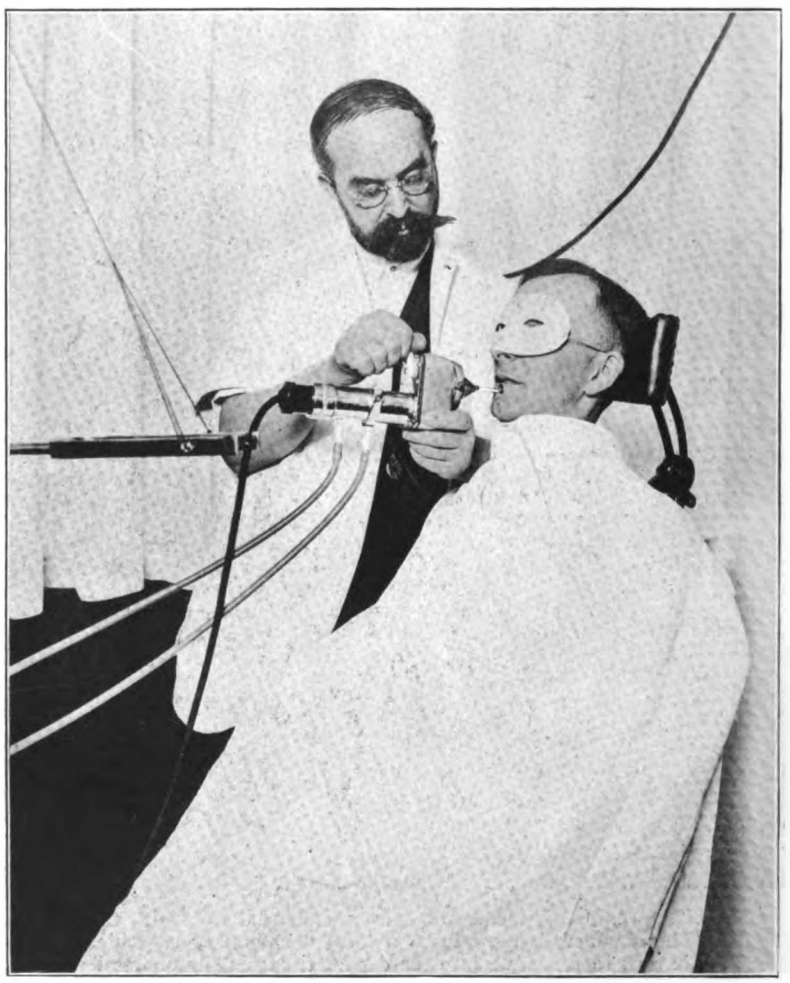


Fig. 190. Showing the tecnic for compression radiation with the Quartz Light past thru a short rod of fused quartz. This is the method for raying an epithelioma.

mayer lamp shown in this illustration (191) is for the direct current.

Fig. 192 shows the interval timer. It is imperativ to use this when giving quartz-light treatments.

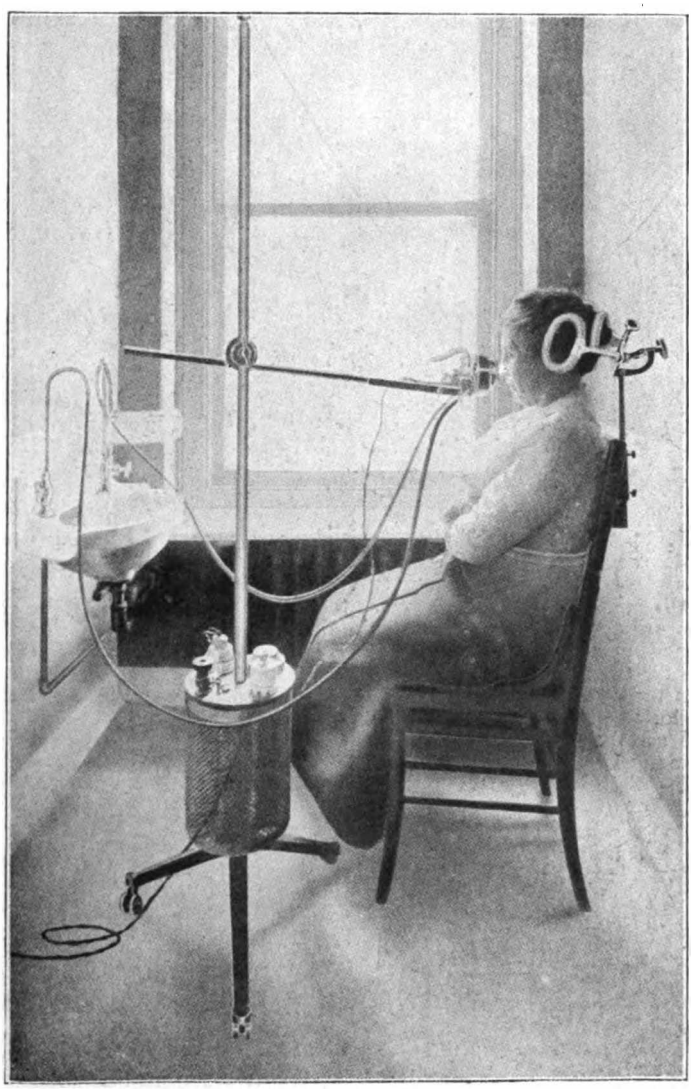


Fig. 191. Showing tecnic for Compression radiation with the Quartz Light thru a quartz lens. Notis the hed rest and how the lamp is held by its support. This is the tecnic when a long exposure is to be given.

This interval timer is furnisht by the Hanovia Chemical & Mfg. Co., Newark, N. J.

Fig. 193 shows the interval-timer electric switch that I use with many of my electrical outfits.

These time switches ar brain and labor savers, and anyone doing very much electro-therapeutic work would do wel to use them.

Fig. 192. Interval Timer. It is designd to giv a warning when a certain predetermind period of time has elapst. It may be set for any period from a quarter minute to two hours .

Directions: The set button at the centre of the back of the timer, as an ordinary clock, is turnd in the direction of the arrow. For a ten-minute interval, the minute hand is turnd around once; for twenty minutes, twice, etc., then the lever (also at the back) is deprest. This starts the clock and the hands slowly turn back to ten; the alarm rings; the clock stops and is redy for use again.

I use these same clocks attacht to electric switches, so the current is automatically cut off. Fig. 193.

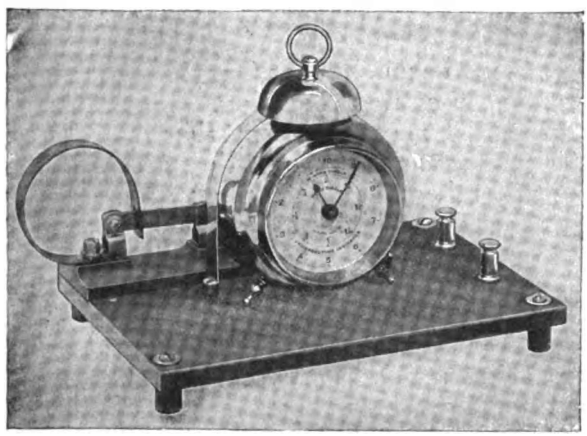


Fig. 193. Time Switch workt by an Interval Timer. These ar m'f'd. by Victor Electric Corporation, Chicago. These Time Switches I hav found to be indispensable for general electro-therapeutic use. They shut off the current when it is prearranged that they should and saves worry and time. These ar also made in a two-pole type.

OXYGEN VAPOR

The term OXYGEN VAPOR was first coind by me and used in my lectures and writings to describe an oily vapor carrying available oxygen.

WHAT IT IS

It is easier to explain what Oxygen Vapor is by setting forth the manner of its production. This I shal do later. For the present, I may say briefly that if air is ionized in the proper manner and then past thru a certain mixture of eucalyptus and other oils of the pinus group, the result wil be a vapor carrying a high percentage of loosely combined and therefore *nascent oxygen.*

It is wel known that the terpenes can be studied only with great difficulty, if at all, owing to the limitations of present day organic chemistry. It is presumed, for instance, that there exists a very considerable number of semi-terpenes; yet not more than three or four of them hav ever been successfully isolated.

For these reasons it is a practical impossibility to establish more than a general chemical caracterization of a product of the kind under discussion. This feature also I shal deal with in greater detail in describing the proper methods for producing Oxygen Vapor.

It has been proved beyond all doubt that this Oxygen Vapor wil, in a short time, kil the most tenacious micro-organisms. It has also been conclusivly demonstrated that properly produced Oxygen Vapor wil not injure the most delicate mucous membrane.

WHAT IT DOES

To tel what Oxygen Vapor really does would require a thousand pages and then the half would not be told.

What does Oxygen do in all Nature? Its uses ar legion. What does Oxygen do for the living body? Without it

there would be no "living body." Peruse the pages of the most elaborate work on human fysiology—from cover to cover it relates the effects of Oxygen.

No disease could take hold of the body if the body wer strong enuf to resist it. That is to say, if the opsonic index—resistance or immunity—of the body wer greater than the power of the enemy—disease.

You cannot enter a house unless there is an entrance open. Neither can disease enter the body unless it has an entrance opend for it.

Oxygen Vapor vs. "Mountain Air"

"Go to the mountains" is often the advice given a patient who is not feeling "up to par." But that is more easily said than done. Not every one can leave business and home. Neither has every one the cash required to meet the expenses of such journeys.

"Mountain air" means clear, fresh air laden with oxygen that is easily taken up by the lungs. Oxygen Vapor differs from mountain air mainly in the degree of strength. Chemically, the two ar very nearly identical. But Oxygen Vapor, being produced artificially and in a concentrated form, is many times more beneficial.

Oxygen Vapor, properly produced and applied, wil do far more for your patient than "mountain air." It is designd to meet the daily needs of the body cels. The patient does not hav to exert himself to obtain it. Nor should we lose sight of the fact that a trip to the mountains is *seldom permanently beneficial,* for the patient afterwards returns to exactly the same conditions and surroundings which originally undermined his helth.

In Oxygen Vapor you can dispense something far better than "mountain air" right in your own offis.

How To Use It

The patient should loosen all clothing, sit in a position which permits thoro relaxation, and inhale Oxygen Vapor *thru the nose* by means of a suitable mask, especially designd for the purpose.

I hav previously mentiond the fact that I always use B-D-C Therapy in conjunction with Oxygen Vapor Therapy.

Figs. 133 and 175 show my method for giving these two modalities together. The patient is seated in an easy chair, grounded and in a subdued light, and facing directly north or south. The Electric Bio-Dynamo-Chrome, with the indicated Chromatic Screen, is placed about five feet away from the patient so the colord light radiates on the bare chest. If the room is warm and the patient does not object, it is best to hav the whole front of the abdomen bare for this treatment. (Fig. 133.)

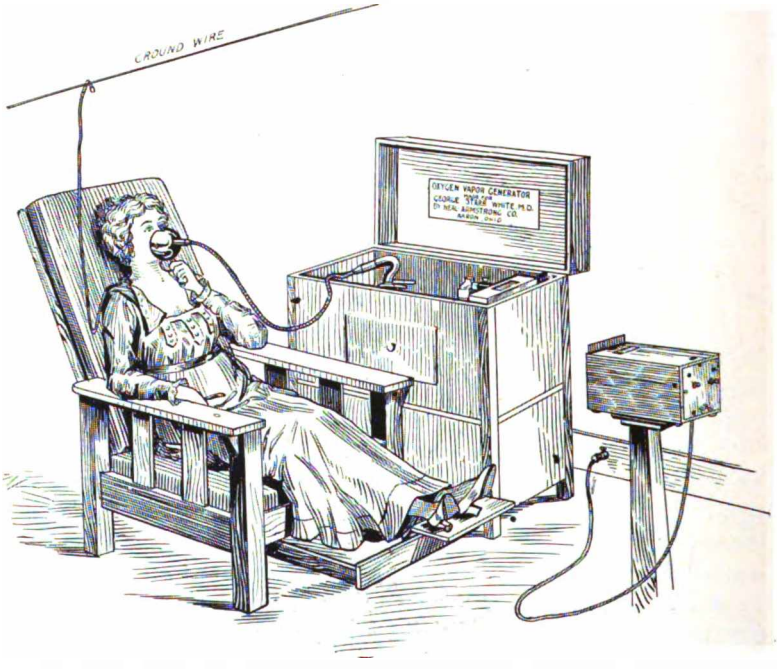


Fig. 175. Showing method of giving Bio-Dynamo-Chromatic Therapy in conjunction with Oxygen-Vapor Therapy. Fig. 133 shows this in one of the author's treatment rooms.

These illustrations show the style of easy chair I use for this purpose. The back is adjustable so the patient can be in a perfectly easy and relaxt position while taking the treatment. Pressing the button in the right hand arm rest, allows the chair back to be placed at any angle.

Single-patient generators make it possible to treat each patient separately. This method I hav found to be superior

to that of having a multiple-patient generator. With a single-patient generator, each patient can be in a room or compartment alone. Compartments can be as small as four feet by nine or ten feet with partitions seven feet high. (Fig. 133.)

Teach the patients how to do deep, abdominal breathing. Do not allow them to talk to anyone, while the treatment is being taken. Hav them relax, rest, and breathe deeply.

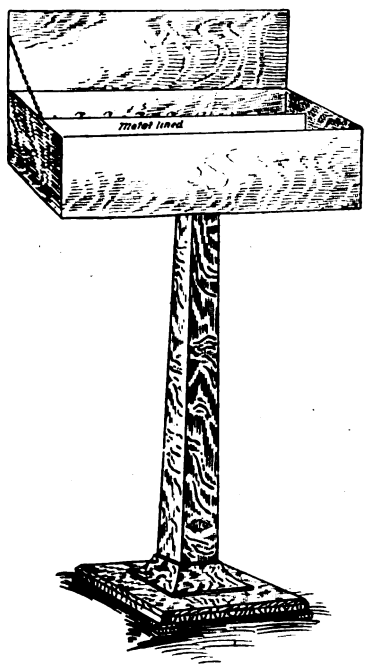


Fig. 176. Showing the style of sterilizer I devized for holding inhalation masks. This makes an elegant outfit and in harmony with the B-D-C outfits.

Instruct patients to inhale thru the mask, but exhale with the mask removed from the face. Be sure that they breathe thru the nose.

If four seconds is required to inflate the lungs and depress the diafram to its limit, the breth should be held for eight seconds and eight seconds should be taken to exhale it.

This opens up the alveoli and strengthens the chest and abdominal muscles as wel as acting favorably on the splancnic vessels.

When To Use It

Oxygen Vapor should be used in all cases where it is desired to equalize metabolism; in all cases that call for a "tonic"; as an "end up" modality with every patient at every treatment.

This may sound absurd, but it is actually quite the reverse. If a person comes to you for treatment at all, he is sick or thinks he is sick. In both cases his metabolism is alterd, for the state of mind affects metabolism as much as, or more than, any other factor.

No matter what other treatment you giv, if any other is required, Oxygen Vapor wil be a great aid. This is easily understood, when you realize just what Oxygen Vapor is.

The requirements of the body as a whole ar the combined requirements of the individual cels. There must be nutrition, stimulation, digestion, assimilation, and elimination. Interferences with any one or more of these processes throw the whole body economy out of perfect functional adjustment.

Thus it is your task to so adjust all these functions that a normal balance may be maintaind; a balance between destructiv and constructiv metabolism; a balance between the production of intracelular waste and the elimination of the products thereof. There must also be supplied a stimulus to cel activity, producing a more normal operation of the voluntary and involuntary muscles, and of those secretory glands whose activities play so prominent a part in the maintenance of helth.

Theoretically, many available drugs and chemicals meet these conditions. But their effects ar obtaind at the expense of vitality; therefore they fall short of the goal sought.

Oxygen, on the other hand, is ideal for the purpose. In both theory and practis it fully meets every requirement of nutrition, stimulation, assimilation, reproduction, and elimination. And not only ar these ends accomplisht without loss of vitality, but there is invariably an actual increase in vitality.

Therefore I repeat that *properly produced and correctly applied Oxygen Vapor wil prove a great aid in all cases, irrespectiv of any other treatment that may be given.*

Its Practicability

Oxygen-Vapor treatment is no less practical and sensible than proper breathing. It brings new patients and holds old ones. You know that you ar giving your patients one of the best and most modern modalities, and they know it too. It helps them and they become your advertising agents.

Drug Tonics Not Needed

The public is being awakend. It cannot be denied that a vast number of people ar tired of drugs, and more of them ar becoming so every day. The public want fysical modalities. If you cannot giv them, some one else wil. Let your patients know that you ar "divorcing" drugs and "marrying" up-to-date methods. Your patients wil be benefited and you wil be benefited.

Potent drugs ar administerd altogether too often for the sole purpose of relieving a symptom,, without removing or even attempting to remove the cause. "A danger spot is no less dangerous when the red light of warning is removed." To smother a symptom is simply a dangerous type of self-deception, because one is too prone to believe that the cause has disappeard along with the result. The same cause may later assert itself in various ways. To block one road and leave all others ungarded does not arrest the progress of the enemy.

Oxygen Vapor is Not a Drug

Oxygen Vapor is in no sense a drug or medicin. It is radically different from drugs in that it strikes at the very root of disease in a perfectly logical and natural manner.

No matter what system of therapy one may adopt to correct abnormal conditions, it is Nature and the natural forces within the body which, in the last analysis, do the curing. To be efficacious, any system of treatment must giv assistance to these natural forces. Whatever is opposed to these forces, or any procedure which upbilds one part of the system while preying upon the energy and vitality of

another, is neither natural nor logical. In the end, such methods must not only fail of their purpose, but wil inevitably do more actual harm than good.

Oxygen Vapor Acts on the Blood

Oxygen Vapor, by daily cleansing and revitalizing the blood, converts the blood into a constant, efficient gard against the insidious attacks of disease. It assists every natural force in the body. It makes it possible for the blood to bild up what the stress and abuse of daily activity tears down.

Waste products ar cast out. New cels grow. The hollow cheek fils out and takes on the ruddy glow of helth. The spring comes back to replace the halting step, and the brain is cleard to meet and battle with the problems of life.

Nature, knowing our needs, has immerst us in an infinit sea of oxygen. And oxygen is the element which all of us need most, whether we ar sick or wel. Oxygen is the greatest tonic that can be obtaind, and when we hav equipt ourselves for administering it properly, drug tonics cease to be a necessity.

When Not To Use It

Oxygen Vapor is not incompatible with any other modality, nor is it incompatible with any drugs. Therefore, there is no condition in which Oxygen Vapor cannot be used.

Caution: If patients hav recently had a pulmonary or bronchial hemorrhage, care must be used in instructing them to breathe. In such cases hav them breathe naturally, taking the treatment at first for only ten or fifteen minutes each day, or at intervals of three or four hours. Augment the deepness of the inhalations gradually.

How Long To Use It

Oxygen Vapor treatments should last about twenty minutes to begin with, and increase five minutes daily until the patient is taking thirty to forty minutes at a sitting. In some cases, when practical, treatments should be given both morning and evening.

The length of time over which these treatments should be given depends entirely upon the nature of the disease. This feature wil be mentiond more particularly later on.

Oxygen Vapor therapy must be studied and lernd to be properly administerd. Those who giv treatments once a week or once a month wil never succede with it. No cronic case of bronchitis, asthma, hay fever, etc., should be accepted for this treatment, unless the patient agrees to take daily treatments for at least one month. For incipient tuberculosis the rule should be that the patient agrees to come daily, Sunday excepted, for at least two months or more.

In What Cases to Use It

As has been explaind elsewhere, Oxygen Vapor can be used in all cases.

Oxygen Vapor can be advantageously used especially in treating diseases of the respiratory tract, digestiv tract, urinary tract, and the circulatory system. It can also be used for conjunctivitis.

It is also very useful in all cases of neuroses, neurasthenia, anemia, high or low blood pressure, constipation, and pelvic diseases of women, especially dysmenorrhea.

In the treatment of insomnia oxygen vapor is a great adjunct.

The Production of Oxygen Vapor

I hav experimented for many years with different machines for ionizing air, and hav bilt such machines myself. I am therefore able to judge more or less accurately of the efficacy of various methods and machines for producing Oxygen Vapor, and to safegard the interests of my readers I feel that I should tel something of what I hav lernd from long and costly experience.

There ar two types of machines which wil convert atmosferic air into (speaking generally) a mixture of ozone, nitrogen or its compounds, and oxygen. One type employs the *arc, or spark method,* and the other uses the *static, or silent method.*

When there is a sparking or arcing of the current, energization of nitrogen is inevitable, and the ozone pro-

duced is mingled with nitrous and nitric oxids. Undoubtedly this helps to account for the irritating and somnolent effects of the ozone so made. If the air is moist, there may also be a production of nitric acid. These by-products cannot be avoided when the discharge is of the arc type.

For these reasons the *silent or static method* of producing ozone seems to be the one which can be most successfully employd in therapeutic work. Unless the generator in such a device is constructed with great care, and unless certain fundamental principles ar strictly observd, even this method wil be a failure, for the reaction caused by a distinct spark discharge is different from that causd by the silent discharge only in degree. The spark discharge, being more intense, causes a more intense reaction. This is demonstrable, altho the actual point of difference between the silent discharge and the spark discharge is difficult to exactly define.

In the production of ozone, and especially in the production of ozone for therapeutic use, it is highly important that the intensity of the discharge be kept below the point at which the inert molecule of nitrogen becomes ionized. On the other hand, the electrical intensity of the surface charge must be sufficiently great to permit a leakage of the electricity into the air around and between the electrodes, for it is thus that ionization of the oxygen molecules is accomplisht. Naturally, also, the ionization of molecules of oxygen should be carried on to as great an extent as possible, in order to get a high concentration of ozone.

The exact point at which these objects ar accomplisht is indeterminate, within limits. That is, there is a minimum intensity at which the ionization of oxygen molecules is fairly complete, and a limited ascending range of intensity thru which ionization of the inert nitrogen molecules does not occur. This may be exprest more clearly by stating that the voltage of the secondary current must not be less than 10,000 nor more than 20,000 to 22,000, altho this maximum may be exceded under certain conditions of construction in the ozonizer. A secondary voltage of 12,000 or 14,000 is, in my opinion, ideal. At the same time, it is important that the amperage be kept very low. The transformer consumption should never be more than one ampère.

How Ozone Is Produced

No doubt an explanation of how ozone is produced wil be interesting. There ar several theories on this point, but the one I prefer to accept is as follows:

All atmosferic air contains a certain number of free ions, each of which possesses, let us say, a negativ charge. If an electrostatic stress is applied to this air, these free ions at once begin to travel toward the pole possessing a charge opposit to that of the ions themselvs. The rapidity of this motion is high or low, according to the potential gradient. At a certain point the "velocity" becomes so great as to develop in the moving ions a kinetic energy sufficiently high to cause them to ionize other atoms, or molecules, which they "strike" in their passage across the field.

Incidentally, this explains why an alternating current is necessary in the production of ozone. With the alternating current the polarity is constantly changing, so that the ions ar kept moving back and forth across the field. They no sooner start toward, say, the positiv pole than that pole becomes negativ, and they ar driven back in the opposit direction. From the "collisions" incident to this constant motion back and forth, the number of ions in the field is augmented.

This brings about the existence of free atoms of oxygen, each of which possesses a charge of electricity. These also move in one direction or the other at high velocity. They collide with each other, and with unaffected molecules of oxygen, bringing about yet more ionizations and combinations.

From this point ozone may be formd in two ways: Two free atoms of oxygen may come together to form a molecule of oxygen, afterwards taking to themselves another atom of oxygen and forming a molecule of ozone; or, what is practically the same thing, a free atom of oxygen may attach itself by virtue of the containd electrical charge, to an as yet unaffected molecule of oxygen, thus forming a molecule of ozone; or, three free atoms of oxygen may combine simultaneously to form a molecule of ozone.

Type of Oxygen-Vapor Generator Required

I am often askt the question as to what make of oxygen-vapor generator is calculated to yield a product most nearly

perfect for therapeutic use. I think my experience qualifies me to say that the best is the glass, vacuum-tube system.

At the present writing I presume the "Neel-system" is the best, but what is best today may not be the best tomorrow, so I would advize all prospectiv purchasers of oxygen-vapor generators to watch for improvements along these lines.

I am an advocate and a large user of the "Neel-system" and I cannot at this time find anything better. Its most prominent fault is that the air which is sent thru the ozonizer is not filterd or dried and consequently particles of dust and water collect on the hermetically seald tubes. The more dust and water there ar on these tubes, the more nitrogen products ar formd, thus altering the originally ideal product. Again, if moisture gathers about these tubes, the product is changed to the "arc type."

The reason for this can be briefly explaind as follows: It is easy to understand that if one point of any electrode is even infinitesimally closer to the approximating electrode at any point, the current wil seek passage by the shortest route. The intensity of the discharge at that point wil be higher and ionization of the inert nitrogen molecules wil result.

No doubt the Neel-process, as *designd* by Dr. Neel, is superior to any other process used at present, because the tubular construction of the electrodes in the "Neel-system" lends itself to equidistant spacing of the electrodes. However, many times the commercial side of a proposition changes its idealism. To make an apparatus that is ideal and to produce the product as I believe Dr. Neel *intended* it should be produced, *filterd* and dried air must go thru the ionizer. The longer the present form of ionizer is used without cleaning, just so much more impure is the product.

There is a great field for an "ideal" oxygen-vapor generator and I hav no doubt that some enterprising concern wil in time put out such an outfit. The expense of developing and manufacturing such an outfit is more than one not accustomd to specialty-outfits would imagin. I think the "Neel-system" *could* be made ideal. To filter and dry the air that passes over the ionizing tubes would mean a different construction in the blower and would probably ad a good deal to the expense of an apparatus, the selling margin of which is alredy quite reduced.

It is up to the physician to say what he wants and *demand* what he wants or not buy, and eventually I think someone wil put out an *ideal* oxygen-vapor generator.

Some hav an idea that the production of oxygen vapor originated in this country, but I hav been told by foreners that air was ionized and past thru pinus oils in the "old country" long before it was experimented on in this country. When I was experimenting with an oxygen vapor generator I was not aware of the French process, and neither was I aware of Dr. Neel's work. This shows that Dr. Neel could easily hav been a pioneer in the work in *this* country and someone else a pioneer in the old country. I mention this to giv Dr. William D. Neel due credit for the wonderful work he did in developing his system, but I also want to make it clear that it is an open field without any "fence" around it.

With most of the types of oxygen-vapor generators now upon the market, the air is *blown* thru the ionizer. I cannot see why a simple apparatus cannot be made whereby the patient himself *draws* the air thru and in so doing cultivates lung expansion. By way of a pointer to anyone who wishes to develop this work, I might say that a high frequency current past thru a vacuum tube produces an energy on the surface of the tube which ionizes the air, provided however that some material is in proximity to this energized tube. If this material is in close contant with the tube, the ionizing of the air is inhibited because the spark gap is annihilated. An apparatus for generating and delivering oxygen vapor does not hav to be elaborate, but the voltage and the amperage of the current should be wel regulated.

In conclusion let me say in view of the fact that there ar so many different types of so-cald "ozone generators" on the market, most of them of doubtful value, and since so many physicians hav a wrong conception of oxygen vapor, confusing it with ozone, my advice is to be very particular in selecting your generator. Remember that the four essentials, and I might say the absolutely necessary features, ar

The production of perfectly pure ozone by high concentration.

A correct method of oil and ozone contact.

Oils of the proper kind.

A type of ozonizer, the efficiency of which is not lessend by use.

If you make sure that these features ar wel coverd, you cannot go far out of the way.

Other Important Features To Be Observd

I hav gone into the ozonizer, or generator, feature in some detail because of its importance. But the production of ozone is one of the least important problems to be solvd in generating Oxygen Vapor. In my work along this line I used most of the different makes of machines available, only to discard them one after the other. Finally, feeling that I knew what was necessary, I bilt a device according to my own ideas. But this also proved unsatisfactory, altho it servd to teach me that there wer other features even more important than the production of ozone.

Many hav the idea that the oils used constitute merely a "bath," whose purpose is to "wash" the ozone of impurities. The absurdity of this idea is easily demonstrated. Take a good ozonizer, test the product by any desired method, and you wil find that it contains no impurities. Why, then, attempt to wash out something which is not there? Now, attempt to inhale the product of such an ozonizer *without* passing it thru the oils. You wil need no further proof that the ozone, *in itself and as ozone,* plays no part in the results obtaind with Oxygen Vapor.

The oil "bath" is not a laundry. The oils do not, or should not, "wash" the product, but ar *actually utilized,* as is demonstrated by the fact that their quantity diminishes as the generator is operated. Most of you hav performd or witnest the experiment which consists of covering the surface of a dish, or pan, of water with a thin film of pinene, which transfers oxygen from the air to the water and converts the latter into hydrogen peroxid. Identically this same thing occurs when some of these oils ar carried to, and deposited upon the surface of the mucosæ, and this is one, altho the least important, reason for using the oils.

The Use of Oils in Producing Oxygen Vapor

In administering Oxygen Vapor the object to be accomplisht is thoro oxygenation of the system. This object we attain, to express it briefly, by conveying to the lungs oxygen

in a state which permits its redy utilization in considerable quantity. It is to provide a carrier for oxygen, in this condition, that the oils ar necessary, and it becomes evident from this that we cannot use whatever oils may come first to hand. This feature is possibly the one of greatest importance.

Let us consider now the method of bringing the ozone and oils into contact. At first it would seem that the best procedure would be to conduct the ozone thru a tube to the very bottom of a considerable volume of oils, let it issue in numerous small globules, or bubbles, thru a nozzle perforated with many very small openings, and thence rise to the surface of the oils. (This would be similar to the bubbling of steam in boiling water). This would mean a very intimate contact between the ozone and the oils and, if contact wer the object, this would certainly be the proper method.

The experience, however, proves the contrary. It is not enuf simply to bring the ozone and oils together. *Remember that the oil carrier must hold the oxygen in very slight restraint if it is to be given up redily.* Conversly, the oils must be of such a nature that there is little or no attraction or affinity between them and oxygen. Certainly the attraction must not be great enuf to tear the atom of oxygen away from the molecule of ozone, for the resulting combination would be a more or less stable oxid, thereby rendering the containd oxygen unavailable for other use when the product is inhaled.

Just what occurs to the ozone and the oils in this tube is not known, further than that *the ozone is entirely destroyd,* losing its identity utterly, and that the resulting *nascent oxygen* is recombined with the volatile elements of the oils. The problem has engaged some of the brightest scientific minds in America, but has thus far remaind unsolvd because it seems to involv something new in both mecanics and organic chemistry.

Care of the Generator

There probably has never been another outfit more carelessly handled than an Oxygen Vapor generator. Yet there is no device that should be handled more carefully or more judiciously.

In the first place, the tubes and masks should be kept clean. The oil-containing tube should be washt in gasoline, benzol, or acetone and alcohol equal parts, at least once a week, then washt out with soapsuds, rinst, and dried. For the flexible tubes nothing but moderately hot water and soap or "gold dust" should be used, the tube being thoroly rinst and dried before being put back into servis. This can all be done in a few minutes if systematically carried out. Letting the air, or ozone, blow thru the tubes before putting new oils into tubes wil effectually dry them.

The masks should be dipt into a 10% watery formaldehyde solution, wiped dry, and kept in a formaldehyde sterilizer. This latter is easily made by putting a towel sprinkled with formaldehyde in a metal box, which should be kept closed. (Fig. 176 shows the kind I use.)

The patient should know that you ar particular about these things. Many physicians ar inclined to be somewhat careless about these small matters, but the one who is particular and lets his patient know that he is particular, is the one who wil succede.

The Oils Used

Be sure that the oils you use ar correct. The manufacturer of the generator you use should be able to advize you on this point.

Never ad turpentine, creosote, fenol, mineral oil, or any other ingredient to these oils.

Use Fresh Oils

The oils in the glass tubes, thru which the ionized air passes, should be changed after every three or four hours of use. *Under no circumstances should they be used over four hours.* Do not forget this. After three or four hours of constant use the volatil elements of the oils ar exhausted, leaving behind practically nothing but oxidized, resinous products. These in themselvs ar very irritating. Moreover, they permit the passage of free ozone, which is objectionable. Therefore they should be changed frequently.

Any attempted economy in connection with the oils—either by using a cheap, inferior substitue, or by using the right oils too long—is really not a saving at all, but an added expense in that the oils and electricity must be paid for without adequate return in the way of therapeutic results.

Amount of Oil in the Tubes

If you use the Oxygen-Vapor generator devized by Dr Neel, it is very important that the oils in the crescent tube be maintaind at just the proper quantity. The upper surface of the oils should come in contact with the tube on the shortest side of the curv for a distance of about one inch.

If too much oil is put into the tube, it wil prevent the passage of the ionized air thru it.

The baffle box key, or supply tube key, should be adjusted so the ionized air just bubbles thru. *Never let it go thru with a rush.* By letting it gently "roll" thru, a proper contact between the ozone and oils wil be accomplisht, all of the ozone wil be detsroyd or converted into nascent oxygen, and the end product wil be devoid of irritativ properties, if the ozone has been properly generated.

Used Oils—Terpene Peroxid

The exhausted or oxidized oils removed from the tubes should be saved. They ar a peroxid of the terpene group. They ar most useful for nose and throat conditions, open sores, or for any purpose for which an oil dressing can be used. They ar apt to be very irritating, however, and in some cases wil hav to be liberally diluted with oliv oil, oil of thuja, liquid petrolatum, melted cocoa butter, mutton tallow, or some other suitable base.

By spraying or washing an open sore with a 15% solution of potassium iodid and then placing this used oil (terpene peroxid) over it, *nascent iodin* is formd. This constitutes one of the best dressings known for sores, altho but few physicians ar aware of it.

Terpene Peroxid Ointment

By mixing seventy-five parts of cocoa butter or mutton tallow, to twenty-five parts of this terpene peroxid, a most valuable ointment is produced. Melt the vehicle first and when it cools to the consistency of lard, work in the terpene peroxid.

"Ozone Treatment"

Do not confuse ozone with Oxygen Vapor. I hav alredy explaind that the two ar by no means the same. Ozone is highly irritating to the mucous membranes and cannot be

inhaled unadulterated, altho pure ozone can be used chemically to produce *nascent iodin*, as I shal presently explain.

By taking the ionized air before it passes thru the oils, one has Ozone.

If a solution of one part potassium iodid to six parts of water is sprayd over a membrane, and if pure ozone is then allowd to flow upon the surface, nascent iodin is immediately formd.

Nascent Iodin Therapy

Iodin has been proved to be one of the most potent germicides known. My method of producing and using it is as follows:

I take one part of potassium iodid and six parts of distild water, mix wel, and store in a tightly stopperd amber bottle. With this solution I cover the infected area to be treated, either by spraying it from an atomizing bottle or by "painting" it on with a soft camel's hair brush or a cotton applicator. Before the solution dries I pass a current of ozone over it.

When pure ozone comes into contact with the potassium iodid solution, iodin wil be liberated and the solution wil turn a deep brown. If you wil wet a piece of blotting paper with this solution and then expose it to pure ozone, you wil see just what takes place and wil be able to smel the iodin. In practis, an atomizing bottle and the ozone tube can often be used simultaneously.

This free iodin wil not stain and is not injurious to the most delicate tissues. I use it in any cavity, be it uterus, bladder, urethra, rectum, or mouth. I also use it on the conjunctiva.

In any condition where I suspect pus, or in which there ar bacteria I wish to destroy, I employ nascent iodin as abov.

For pyorrhea alveolaris nascent iodin acts like magic.

If for any reason you want to watch the formation of nascent iodin over any tissue or material that is of a deep brown color originally, ad about 1 mil of common starch solution to 50 or 100 mils of the 1 to 6 potassium iodid solution. Then, as the nascent iodin is liberated, the starch is attackt and starch iodid formd. The latter is deep blue in color, and therefore redily observable on a brown background. The starch has nothing to do with the therapeutic

effects, but is simply a convenience at times, as an indicator of the reaction.

When taking ozone from an Oxygen Vapor generator, be careful that the opening in the glass applicator does not touch the surface being treated, as the pressure behind the ozone gas is not sufficient to overcome any obstruction to its free flow, unless a pump is used.

Nascent Iodin Tecnic

The reaction of ozone and potassium iodid is, first, the formation of iodic and hydriodic acids. These two acids mutually attack and destroy each other, resulting in the liberation of nascent iodin and water. The nascent iodin then combines with the formation of periodic acid, iodates and hypo-iodates, thus serving the purpose of an activ, potent germicide, without corrosiv or irritating effect.

After the KI solution is applied to the surface to be treated, pure ozone can be effectivly used over it for about two minutes before a second application of the KI solution is required.

If the throat or oral cavity is being treated, hav the patient take a deep breth immediately before introducing the pure ozone into the mouth. The breth can easily be held twenty or thirty seconds while the ozone is being applied, and then exhale. The inhalation of pure ozone, which is irritating to the air passages, is thus avoided. This maneuver can be carried out two or three times after each application of the KI solution.

If one has a quartz, mercury-vapor lamp with suitable quartz lens applicators, the Quartz Light should be used in place of nascent iodin, as it is the most potent germicide known and easily handled.

Oxygen Vapor in Conjunctivitis and Similar Conditions

Some time ago one of my pupils reported a case of severe conjunctivitis which had resisted all methods of treatment and was relievd and cured in a very short time by means of Oxygen Vapor. His tecnic was to place the mask over the open eye and let the patient hold it there for several minutes while the generator was in operation. This irritates the eye a little and causes a little lacrymation, but with no bad effects.

Since receiving this report I hav told many others and they hav tried it out with the same results. I hav tried it personally and find it is an excellent treatment for conjunctivitis.

Other inflamed conditions of the conjunctiva ar greatly relievd if not cured by this treatment. It opens up an entirely new field for the use of Oxygen Vapor and I sincerely hope my pupils wil try this out and send me reports, giving symptoms and diagnosis of the case, treatment and results.

Oxygen Vapor in Glycosuria

(Before taking up this discussion, I think it wise to discuss the definition of the term, *hormone.*)

The term "hormone" is stil comparativly new and its meaning is not quite clear to all. The name was first used by Prof. E. H. Starling of University College, London, following his discovery of the hormone secretion. He proposed this word from the Greek word meaning "I arouse or excite" as a name for the activ principle of the internal secretions. In 1910 Prof. W. H. Howell defined hormones as "those substances in solution which, conveyd from one organ to another thru any of the liquid media of the body, effect a correlation between the activities of the organ of origin and the organ on which they exert their specific effect."

Prof. Starling, before the Royal Society of Medicin, made the following statement: "By the term 'hormone' I understand any substance normally produced in the cels of some part of the body and carried by the blood stream to distant parts, which it affects for the good of the organism as a whole. The hormones ar thus the chemical means of correlation of the activities of different parts of the body. Their action may be either the increase or diminution of function, or the alteration of nutrition or rate of growth."

Certain facts pertaining to the condition known as glycosuria and acidosis ar quite wel establisht and generally accepted by the profession. Several theories at variance with these accepted facts hav been put forth, but anything like general credence has been denied them. I shal therefore base my remarks on the assumption that *glycosuria is primarily due to faulty metabolism.*

The blood in helth contains about 0.2% of dextrose sugar. This sugar is being constantly metabolized in the tissues, and as constantly replenisht from the glycogen stored

in the liver. The blood cannot hold more than a given amount of sugar. If a helthy person ingests a large quantity of sugar-forming food (especially on an empty stomac), the surplus appears in the urin.

Diabetes mellitus is that morbid condition of the system in which the urin habitually contains dextrose sugar in excess, which excess is not the consequence of any excess in the consumption of sugar-forming foods. The essential fact of the disease is that the tissues ar unable to utilize the sugar in the blood placed at their disposal. It therefore accumulates in the blood, whence it is excreted by the kidneys. The tissues then, in spite of an abundance of sugar lying at their door, ar sugar-starvd.

Minkowski explains this condition as being due to the absence of pancreatic hormone. This hormone is the coferment which activates the ferment proper that metabolizes sugar in the tissues. Failure of activation results in the accumulation of sugar in the blood, and its consequent appearance in the urin.

Minkowski's theory is wel supported by the evidence shown by autopsy, in which about 75% of cases of diabetes exhibit a diseasd pancreas. In these cases the changes consist of an increase of the connectiv tissue stroma, accompanied by atrofy of the parenchyma. The occurrence of diabetic coma is probably due to the presence in the blood of the fatty acid, B. hydroxybutyric acid.

This acid is a normal product of fat metabolism; it is not, however, found in helthy urin. It is probably oxidized into aceto-acetic acid, which, by losing CO_2, becomes acetone. Of these various bodies, acetone alone is found in helthy urin. Only when we observ acetone in excess, do we speak of acetonuria. In diabetic coma, the oxidation of B. hydroxybutyric acid seems to fail and it accumulates in the system, bringing about acidosis.

By "Acidosis" is ment the condition in which there is a markt reduction in the alkalin reactivity of the blood, owing to the presence therein of abnormal quantities of B. hydroxybutyric and aceto-acetic acids (which fail to be oxidized into acetone).

There ar two explanations of the resulting symptoms:

(a) Under ordinary circumstances the alkalis of the blood carry CO_2 from the tissues to the air in the lungs. Should, however, the aforesaid acids be present, they, by

combining with the alkalis, prevent the removal of CO_2. Accordingly the CO_2 stagnates in the tissues, setting up tissue asfyxia.

(b) The respiratory center in the medulla, owing to the reduced alkalin reactivity of its neurosome, becomes hypersensitiv to the action of CO_2, which is their normal stimulus.

This somewhat sketchy review of the condition leading up to diabetes mellitus, together with the blood conditions observd during the varying stages of the disease, lead us to the conclusion that *faulty metabolism* is the cause, and in the alteration and correction of metabolism lie the cure.

Primarily we must stimulate the secretion of hormone by the pancreas. This can be accomplisht by a general cel stimulation thru oxygenation of the blood by means of oxygen vapor inhalations. The next result of this blood oxygenation is the oxidation of B. hydroxybutyric and aceto-acetic acids to acetone, with a relativ increase in the alkalin reactivity of the blood.

Oxygen Vapor inhalations do increase the oxygen capacity of the blood, as was demonstrated by Labbe in Paris. He submitted several anemic patients to daily blood examinations, both before and after inhaling oxygen vapor. He used a Henocque hematospectroscope capable of showing fractional percentages of oxyhemoglobin.

An inhalation of thirty minutes gave an increase in oxyhemoglobin of 1%. During the ensuing twenty-four hours, all but one-tenth of 1% was lost thru tissue absorption. Another thirty minute inhalation of the vapor would again augment the oxyhemoglobin 1%, with another subsequent loss of all but one-tenth of 1%, plus the one-tenth of 1% gaind the previous day. In this way he was able to gradually bring the blood to a condition of helthy normality, the time required being governd by the pathological conditions leading up to the anemia.

Theoretically, as wel as practically, *oxygen vapor* seems to offer more chance for success in the treatment of diabetes, than any other modality. We hav in it a potent vehicle for the carrying of oxygen in an assimilable form to the blood, thru which we eliminate acidosis and promote sugar absorption by the tissues and hormone secretion by the pancreas, as secondaries to metabolic alteration and corrcetion thru cel stimulation.

NOTE

While speaking of hormones and glycosuria, I want to mention a fenomenon which I discoverd and hav often proved—that is, regarding the stimulation of the 2d and 3d cervical vertebræ.

I place one electrode over the 2d and 3d cervical vertebræ and the other over the eyes as shown in Fig. 254, and use a specially interrupted, rapid-sine wave current (*Pulsoidal Current*). This treatment, if given ten to fifteen minutes daily, wil reduce blood pressure and also cause the sugar in the urin of one suffering with diabetes mellitus to almost entirely disappear. I believe the cause is that the treatment as outlined acts on the hormone secretion thru the pituitary body.

OXYGEN VAPOR THERAPY—CLINICAL CASES

In the following four cases the treatment consisted of Oxygen Vapor only. Inasmuch as two of them wer children, these cases conclusivly refute the assertion of those few, who profess to believe that Oxygen Vapor produces results only thru "suggestion." For my own part, I care not whether I accomplish a cure by suggestion or by some other means, as long as the cure *is* accomplisht. The patient seeks the physician for the purpose of being *cured*. He does not ask *how* the curing is to be accomplisht—he is concernd only with the *result*, and not at all with the *means*, only that it is not painful. *Any* method which wil and does enable the physician to honorably perform the work for which the patient employs him is legitimate, and it is the duty of every one of us to use it.

Case I. Betty B. Age 22 months. Contracted double lobar pneumonia just before Christmas. Left lung tapt. Temperature high. Condition grave. Slight improvement about January 3d, followd by relapse January 7th. Temperature 105° F. Portable Oxygen-Vapor generator was placed at the patient's bedside at this time, and nurse administerd treatment for fifteen-minute periods at two hour intervals, day and night. Temperature immediately began to subside and in 23 hours was normal. Improvement in all conditions was thenceforth rapid and the little patient made a fine recovery.

Case II. Harry C. Age 7 years. Anemic and frail from birth. Digestion and assimilation poor. Very weak.

Could not walk unassisted. Excessivly nervous. Insomnia pronounst. Lethargic. No appetite. On January 10th, Oxygen-Vapor treatments wer begun. After third treatment patient slept normally and seemd stronger. Strength increast rapidly. After seventh treatment he went upstairs unassisted, and exprest a desire to play in the yard. At the end of three weeks, daily treatments, the child began to go to scool for the first time.

Case III. Mrs. H. 45 years old. Insomnia 22 years. Always retired late "because she could not sleep." Had seen many doctors and, being welthy, had receivd the best treatment that could be accorded her by many of the most prominent physicians and surgeons in the country. In short, she "had tried everything" without result. On January 16th, patient began taking Oxygen-Vapor treatments. All other modalities wer discontinued and thirty-five minute, Oxygen-Vapor treatments wer given daily, about 5 p.m. On the third day patient fel asleep in her chair, at home, after eating dinner; slept undisturbd for three hours; retired, and slept til cald the following morning. From that day on she has slept normally. In five weeks patient gaind eighteen pounds, and then reported that she did not remember that she ever felt so wel. Patient was discharged after five weeks as cured and she has remaind wel.

Case IV. Mr. H. 38 years old. Diagnosed by several wel qualified physicians as suffering with "second and third stage" pulmonary tuberculosis. Prognosis written down as "hopeless."

He receivd no other modality except Oxygen Vapor for ten months, daily treatments, and was then perfectly wel.

I could name enuf cases to fil a large book, but the abov wil giv you some idea of what I am doing with Oxygen Vapor and my pupils giv similar reports.

CONDENST OUT-OF-DOORS TREATMENT

DEFINITION

Out-of-doors treatment means *natural* treatment. It signifies that the *great out-of-doors* is the True Physician—the symbol of helth.

As modern ideas hav been so side-trackt from the *natural* way, it is difficult to explain just what *natural* methods really mean.

We can explain natural methods only by observing natural animals—those born and reard in the open.

"Civilized man" means distorted, *unnatural man*—a *remains* of what once was, but what I believe in the cycle of time wil be again.

"Cultivate" any animal or plant to a certain limit and it is of another kind—a *remains* of what *nature* created.

Man—ignorant, egotistical man—thot to improve on nature so put garments on their offspring to smother them; fed them with faked foods to starv them; made them sick to keep them wel; taut them avaris and to covet welth. This by one side is cald "culture" but the other side saw the weak spot in "culture" and so designd "Kultur," and that was "the straw that broke the camel's back."

Nature means "man made in the image and likeness of God." What a travesty man is on nature! It is like the painter who had workt long and hard to produce an ideal canvas. Fire destroyd it and as he stood gazing at the ashes of what ment years of toil and a fortune, a sympathizer said, "Is it really all lost?" "No," replied the filosofic artist, "I hav the *idea* yet." So we may look for the natural man and not be able to find him, but there is an *idea*.

We know that reform comes only by evolution—by "unfolding along the axis of growth," so we hav to substitute some method to take place of what *seems* natural.

On the other hand we cannot all so soon get into a natural sfere and consequently we must seek the nearest approach to it.

Look in the face of nature. What do you see? *Light.* What do you feel? *Air.*

Now, go to the top of a high peak 16,000 or more feet high. You see and feel the same, but it is *different.* In comparison with what it was on the level, it is *condenst,* even tho it be rarified. The action on the observer is as tho he wer in a *condenst out-of-doors.*

That is just what condenst out-of-doors treatment signifies—radiant light unadulterated and oxygen undefiled.

What *condenst out-of-doors* treatment can do can be done by proper out-of-doors living, but if the twig is bent to the right it must be overbent to the left to make it grow strait. Hence, *exaggerated out-of-doors* treatment is required to rectify abnormal conditions.

How Condenst Out-of-Doors Treatment is Applied

The powerful incandescent light (3,000 candle-power) passes thru glass, so it is not an equivalent to condenst sunlight. We remedy that by radiating powerful actinic rays from a quartz, mercury-vapor lamp (quartz light) in conjunction with the powerful incandescent light. These two in combination make *condenst sunlight*—sunlight resembling that at a very high altitude.

The evergreen trees in the mountains giv us ozone. Artificial ozone is irritating, so we use a vapor of evergreen-tree oils laden with available oxygen—*condenst oxygen* as it wer.

Now, the *condenst* light and the *condenst* oxygen constitute the *condenst out-of-doors,* if to it we ad what is required to bring the nervous system up to the highest point of efficiency—*Bio-Dynamo-Chromatic* therapy.

So then *condenst out-of-doors treatment* means the radiations from the powerful incandescent lamp combined with those from the quartz light, oxygen-vapor inhalation, and B-D-C therapy.

When a patient receives such treatment, they ar receiving in reality more than they would get if in the mountains, if we can impress it upon them that they must always look upward and carry a smile, as *nature loves a cheerful receiver.*

PART THREE

DIAGNOSIS AS A SPECIALTY

Clinical Cases and Conclusions

Of all the branches in medicin, probably *diagnosis* is the most important. As to whether the diagnosis is right or wrong often means the life or deth of the patient.

I am aware of the fact that many practicians of the healing art say it matters not what the diagnosis is. They say they treat the symptoms and not the disease. In many instances the diagnosis is not at all important, but by citing actual cases, I shal try to prove that a correct diagnosis ment a cure in many cases, while symptomatic treatment would hav ment deth or no relief from symptoms.

The axiom, "Treat the man that's got the disease and not the disease that's got the man," always holds good, but it is of the utmost importance to know how to treat the *man*. No doubt this axiom, utterd by one of our greatest medical filosofers, ment that we should remove any impediment and aid nature in every way possible to treat the man that had the disease rather than treat the *named* disease that perhaps had the man.

Treatment of course is of next importance to diagnosis but as this lecture is dealing with diagnosis, the treatment wil be mentiond only in brief and as a secondary consideration to prove that diagnoses, made by a natural method, wer correct and that the "specialty diagnostician" was in error.

Diagnosticians can be divided into two classes—general diagnosticians and "specialty diagnosticians."

Every diagnostician should be a *general* diagnostician, and every physician should be skild in general diagnosing.

The "specialty diagnostician" is too often narrow minded. His work makes him narrow. He can hardly see beyond his own specialty. He is in many instances a dangerous person to consult. In the past few years I hav met hundreds of people who hav been sent to me after going to

very many "specialty diagnosticians." In every case each diagnostician had diagnosed the patient as being afflicted *according to his own specialty.*

If one is sick in one part of the body, every other part of the body is more or less affected, but the "specialty diagnostician" too often says that the *main* cause of complaint centers in *his own* specialty.

The following is gatherd from records in one hospital in the Middle West and reported by Nuzum:

1. Of 1,000 tabetics, 8.7 per cent. hav been subjected to laparotomy under mistaken diagnosis one or more times.

2. The "crisis" of tabes hav largely influenst the surgeon in his decision to operate. This statement is supported by the fact that 65 per cent. of the eighty-seven patients operated on presented visceral crises. In 17 per cent. of these, the "crises" wer the initial symptoms of their disease.

3. Mistaken diagnosis and resulting operations occur chiefly thru failure to examin the nervous system.

4. Gastric ulcer, gall-bladder disease and appendicitis ar the diagnoses most frequently made.

5. Tabetics subjected to several successiv laparotomies hav, as a rule, been operated on by as many different surgeons.

6. A history of paroxysmal attacks of vomiting, reumatism, paresthesias, bladder disturbances or fractures without fysical violence should excite interest to exclude tabes dorsalis.

Case 147

Man 44 yrs. old. Went to four of the very best "specialty diagnosticians" in one of the large eastern cities. One said his trouble was in the prostrate. Another said that was O. K. but the trouble was in the gall bladder. Another said the trouble was from the kidneys, and another said it came from falling arches. This man then went to another city and began to hunt up the best men in specialty diagnosis. One said if his eyes wer correctly fixt up he would be wel and another said his nervs wer at fault and diagnosed him as having "progressiv spinal sclerosis." Another said the stomac was the offending organ, and the last one consulted said the whole fault was in the internal secretions. All this

time the patient was being treated first for one thing and then for another. After many months of fruitless efforts to get wel, someone sent him to me. By means of the dual-puls method and air-colum percussion, I diagnosed the trouble as splancnic relaxation and advized treatment for same, as wel as a suitable abdominal support, but I advized no drugs. Within six weeks this man was perfectly wel and he has remaind wel.

Treating this man's symptoms would never hav cured him. I simply aided nature to do the curing—gave her a crutch as it wer, to help boost the afflicted parts and then all else lined up in a natural manner.

Case 148

Married lady 38 yrs. old. Treated nearly a year for ulcer of the stomac. Her symptoms indicated ulcer of the stomac. Operation was said to be the only means of saving her life. I found ulcer in the bottom of the navel. I aided nature to cure that and the patient recoverd quickly and has remaind wel for years.

Case 149

Man 58 yrs. old. Had symptoms of malaria. Was treated for malaria for over a year. Continued to get worse. Was sent to Minnesota surgeons who said they could find nothing to operate for, but they considerd the trouble was with the internal secretions—just where, they would not guess. He was sent to me to see if colors would aid in locating the fault. I diagnosed the case as infection from colon bacilli and used the powerful electric light and sunlight to aid nature to bring the trouble to the surface or cure it. After six weeks a thirty-year-old bayonet wound showd up as being the leak from the colon to the tissues. Proctoscopes would not show it. I advized him to be operated on. The gluteal region was found to be ful of canals fild with colon excreta. After a thoro operation the patient made a rapid recovery and is now a wel man.

Symptomatic treatment would never hav cured this patient. He would hav died from infection sooner or later. Every known laboratory method was used to diagnose the trouble. Nature's impediment was removed and she did the rest.

Case 150

Married lady 30 yrs. old. Treated six years for tuberculosis. All symptoms, even the "cof," indicated tuberculosis. She did not improve but continued to grow worse. She had been to the best T. B. specialists in the United States and all agreed that tuberculosis in some hidden form was her trouble. Every known T. B. cure was used. She was sent to me and nature's finer forces (color and the magnetic meridian) diagnosed her as having gonorrheal infection. She was treated for same, following out my Bio-Dynamo-Chromatic system which is a natural method, and she fully recoverd and is now to all appearances a wel woman.

Treating her symptoms would never hav cured her, but nature cured her when given a chance.

Case 151

Single lady 40 yrs. old. Treated two years for "killing hedakes." All kinds of doctors had diagnosed her and had tried out their remedies. Opiates of all brands had been employd but stil the hedakes raged until a psychiatrist diagnosed her case as "some form of insanity."

She was brot to me and I examind her reflexes the best I could. I found an unyielding hymen and vaginismus. I thoroly dilated the vagina and for over a year now she has been wel—no hedakes at all. Treating symptoms would never hav cured this lady. The diagnosis was the important question to be settled. Nature was aided so she could act.

Case 152

Girl 11 yrs. old. Treated four years for epilepsy. Her symptoms wer those of epilepsy, and a "specialty man" had so diagnosed the case. She was sent to me for diagnosis as she was not improving and her mentality was retrogressing. I diagnosed her as having fright spasms and when treated for that by suggestion she fully recoverd. Treating her symptoms would never hav cured her, but on the contrary she would hav gone from bad to worse.

Case 153

Lady 35 yrs. old. Diagnosed as having "nerv degeneration" owing to peculiar localized skin irritation. Treatment for symptoms did her no good and she was becoming a

nervous wreck. I diagnosed her as having pinworms and treated her for same. Within ten days she was wel and has remaind wel.

Case 154

Baby girl about two years old. Eruption on body all the time. Case diagnosed as "stomac trouble." I diagnosed the case as reflex irritation from closed vagina. Opend vagina and all symptoms cleard up quickly. Treating this child's symptoms would never hav cured the condition.

Case 155

Boy about three years old had spasms every half hour. Was diagnosed by a "specialty man" as irritation of spinal cord and a "desperate case." I diagnosed it as reflex from glans penis. After circumcision and a few weeks' good care he fully recoverd.

Case 156

Man 40 yrs. old. Diagnosed by nerv specialists as having "sciatic neuritis" and all sorts of counter-irritants wer used and symptomatic treatment given for two years. Patient did not improve. I diagnosed him as having fallen arches and proper shoes aided nature to cure this sufferer within a month.

Case 157

Married lady 42 yrs. old. Had severe tic douloureux for two or three years. Had been to several "specialty men" and finally operation on Glaserian ganglion was decided upon. A friend of hers sent her to me. By means of the FitzGerald cautery test on the teeth I diagnosed the trouble as an elongated root to an upper molar and advized extraction of that tooth. After the tooth was extracted there was no more tic douloureux. Nature had a chance to work. No drugs would ever hav cured this lady.

Case 158

Married lady 60 yrs. old. Diagnosed by four specialty men as having "cancer somewhere in the abdomen." Pa-

tient was advized to hav operation. I diagnosed the case by means of the Bio-Dynamo-Chromatic system as non-malignant. The trouble seemd to be general tosis and after a few weeks of powerful light and Bio-Dynamo-Chromatic treatment along with proper dressing, she fully recoverd from her "cancer fright," which really was her *acute* trouble.

Case 159

Single lady 28 yrs. old. Diagnosed by cancer specialists as having cancer of the left brest. Nodules in the brest wer very evident. A radical operation was advized for the removal of the brest. She was sent to me for diagnosis and by means of the Bio-Dynamo-Chromatic system I diagnosed her case as benign. By means of soluble iodin and the 3,000-candle-power light this lady was cured of her trouble and her brest was normal within two months and has remaind so.

Case 160

Single lady 32 yrs. old. Diagnosed by specialty men as having endometritis with erosions. Symptoms indicated that this diagnosis was correct. She was brot to me for treatment. I diagnosed the case as uterin cancer. A subsequent operation, contrary to my advice, proved the diagnosis to be correct, but she died from the effects of the operation within a few days.

Case 161

Lady 38 yrs. old. Sufferd from weakness and nervous symptoms for over a year. Had been diagnosed by T. B. specialists as having "maskt tuberculosis." Was treated for tuberculosis but did not improve. Became so weak she could not walk upstairs. Was brot to me for diagnosis. According to my Bio-Dynamo-Chromatic method I could definitly say she had no tuberculosis but auto-intoxication from gall bladder. Treated her with 3,000-candle-power lamp and B-D-C system for a month and she was wel, and has remaind wel for over two years.

Treating this lady's symptoms did not aid her. Treating her according to a *named* condition did not help her. The correct diagnosis made it easy to aid nature to effect a cure.

Case 162

Married lady 55 yrs. old. Had been to the best eastern stomac-specialty diagnosticians and they had diagnosed her condition as ulcer of the stomac or duodenum. She was taken to the Middle West and there a nerv specialist diagnosed her as having some progressiv spinal trouble. She then went to an osteopathic man of reputation and he said a "slipt" or "dislocated" vertebra was the trouble. He treated her for several weeks and she grew worse. She came to California for her helth, as "change of climate" was said to be the only sure relief. At San Francisco she was diagnosed by a man who claims to be a syfilologist. He said her trouble was syfilis and mercury rubs wer resorted to and some intra-venous treatment given. She grew worse. Some one sent her to me. By means of the Bio-Dynamo-Chromatic method I diagnosed her as having cancer of the intestins.

The husband and others of her family would not believe my diagnosis and she was taken to a wel known surgeon for a *final* diagnosis. He said there wer no signs of cancer but that the gall bladder was ful of stones and advized an immediate operation "to save her life." She was opend and gall bladder found to be in perfect condition, but the abdomen was ful of adhesions from intestinal cancer. She died within five days.

This was a remarkable case for I was able to look it up and find out something of the "specialists" who diagnosed it, and had some one at the operation to giv me a correct report.

Case 163

Lady 22 yrs. old went to throat specialist because she could not sing as wel as she wanted to. He told her the tonsils wer very much "decayd" and unless removed her general helth would be ruind. He told her an *immediate* operation was imperativ. She would not listen to him and came to me for advice. I told her that her tonsils wer in perfect condition and deep breathing would be the only remedy needed. She has enjoyd perfect helth for years, but has lernd deep breathing.

Case 164

Man 40 yrs. old had sore throat. Went to a nose and throat specialist who said the tonsils wer diseasd and must

be removed at once. He had a mind of his own and came to consult me. I found the tonsils normal and prescribed sunlight and deep breathing thru the nose. He has remaind in perfect condition for years. This proved my diagnosis was correct.

Case 165

Man 50 yrs. old. Did not feel wel and consulted seven specialty diagnosticians. Each one diagnosed his trouble as being according to his respectiv specialty. For example, the blood specialist said the number of cels wer not correct and a course of intra-venous medication would make that O. K. A urinologist said the sole trouble was with the prostate. An orthopedist said his only trouble was his feet, and so on all along the line.

He was sent to me and I found him suffering from auto-intoxication, and diagnosed his trouble as ulcer of the colon. I treated him with powerful light and the pulsoidal current for a few weeks, and he fully recoverd his helth and has remaind wel.

Case 166

Man 60 yrs. old. Diagnosed by three cancer specialists as having cancer of the rectum. Operation advized as "the last hope." He was sent to me and by means of the B-D-C method of diagnosis I was able to positivly say the trouble was simple ulcer of the rectum. Soluble iodin, powerful light, and dietetic mesures heald the ulcer and it has remaind heald, and the man is wel.

Had this victim followd the "cancer specialist's" advice, another "deth from cancer" would hav been recorded.

Case 167

Lady 32 yrs. old. Diagnosed by two wel-known psychiatrists as insane and sent to a "nervy" sanitarium with private nurses. She did not improve and her relativs askt me to diagnose her.

I found that she had an obsession that she had a cancerous tumor in the abdomen. I askt her why she had the idea of cancer and she said several surgeons had told her she had one, and would hav to be operated on. She said she would never be cut open and she thot of cancer day and

night. I convinst her that she had no cancer and that she was wel. She left the institution and within a month was normal. and is now a sound, wel woman.

Surgeons had frightend her so that melancolia had taken hold of her. She was welthy and the sanitarium had taken hold of her. If it had not been for true friends, deth would probably hav taken hold of her and lawyers would hav taken hold of her "remains."

Case 168

Man 44 yrs. old. Diagnosed by several specialty diagnosticians and surgeons as having cancer of the stomac, and operation repeatedly advized. According to the Bio-Dynamo-Chromatic method, his case showd no cancer but showd an affection of the spleen. This man recently died and the autopsy showd his stomac to be normal and the cause of deth "cronic inflammation of the spleen."

Case 169

Man 68 yrs. old. Enlarged prostate. Diagnosed by a specialty man as having cancer of the prostate. Immediate operation was advized. Patient refused operation. A consultant was cald in and he concurd with the specialist who diagnosed the condition as cancerous. A third doctor was cald in as patient was suffering from an extended bladder. He concurd with the other two and the family was told the man could not liv thirty-six hours without an operation.

A pupil of mine was cald in and he diagnosed the case by my Bio-Dynamo-Chromatic system as non-cancerous. He found a very much enlarged prostate and explaind to the family just what his findings wer. The surgeons and specialty man wer discharged and my pupil began putting hot stupes on and within a few hours began using the Pulsoidal Current thru the rectum. For over a year the man has been wel and has no prostatic trouble that bothers him.

The true diagnosis was acute hypertrofy of the prostate and time has proved that the diagnosis was correct. I might ad that this man is welthy and perhaps that had some influence on the first three men's diagnosis and eagerness for an operation. However, the facts ar as abov stated. *Constructiv* rather than destructiv methods saved the man's life.

This World War cronicles cannot report a case of murder as diabolical as that causd by a surgeon who operates for money, regardless of the necessity. The "concurring diagnostician" is as bad.

Case 170

Single lady 32 years old. For about three years she had sufferd from "dyspepsia." For two years she had sufferd from extreme nervousness. She consulted several "stomac specialists" who told her her trouble was catar of the stomac. She tried all sorts of remedies and followd the advice of the various physicians whom she consulted but continued to grow worse. She finally went to a physician who does nothing but stomac work and he said nothing would prevent her having ulcer of the stomac except a long fast or a modified fast. He prescribed about two ounces of orange juice every alternate hour and every other alternate hour a teaspoonful of milk of magnesia. He prescribed an enema consisting of one quart of epsom salt water twice daily and a teaspoonful of oliv oil every night. He said this plan must be followd out to the letter for forty days.

After she had followd it for four days she became so weak that a perfect stranger seeing her in one of our parks advized her to come to see me. I found her quite emaciated and very weak. Her family history showd no tuberculosis and her personal history was negativ up to three years ago when she began to hav digestiv troubles.

According to my Bio-Dynamo-Chromatic findings, she had tuberculosis and by the same method I located the lesion in the middle lobe of the right lung and told her so. She could not believe it as she had never had any of the popularly known symptoms of tuberculosis. I made it emfatic that I *knew* my findings wer correct and told her she could use any method she wisht to prove it. I advized her to immediately begin common sense dietetic mesures for tuberculosis and not delay a day.

As far as I can lern, as soon as she left my offis she went to a lung specialist who told her that she had no tuberculosis and to prove it he used all sorts of methods to make her cof, and irritated her throat to test her sputum. As he could not find any tubercle bacilli in the sputum he said my diagnosis was wrong. She told me over the 'fone what this man had said but I told her that I knew I was right. Just

before I left for the east, she cald me up on the 'fone and told me she had been to an x-ray laboratory and had an x-ray picture taken of her chest. The x-ray man told her that the middle lobe of the right lung showd a large area which he considerd to be tuberculous. She said now she was satisfied that my diagnosis was correct and would follow out my advice for treatment.

This is a very typical case, and I am continually having similar cases brot to my attention. The ordinary laboratory methods for diagnosing tuberculosis do not appear to be any better than they wer twenty years ago unless it is that the x-ray helps out in some cases. When it comes to the very onset of tuberculosis, every laboratory method so far used has been proved to be absolutely worthless. I might say that I hav many cases sent to me where my diagnosis of tuberculosis is apparently erroneous as the symptoms ar often simply digestiv disturbances and nervousness.

The majority of all cases of tuberculosis, if diagnosed at the very onset, could be cured if common sense methods wer employd. Waiting to find the tubercle bacilli wil in time be considerd criminal practis, as it should be. Whenever you ar in doubt as to the diagnosis of tuberculosis and if you hav any suspicions that tuberculosis exists, treat as if you had found tubercle bacilli. Do not wait. Delays ar extremely dangerous in this condition. Had the lady abov referd to carried out the plan of the 'stomac specialist," she would doubtless hav died inside of another two weeks.

Right here I wish to bring out most emfatically one point that seems to be overlookt by nearly every diagnostician, and that is that finding tubercle bacilli in the sputum without other indications does not prove that the patient has tuberculosis any more than finding sugar in the urin proves he has diabetes mellitus. On a windy day any person walking along the streets cannot help but inhale more or less tubercle bacilli, especially in a thickly populated city. I hav been told that one wel-known bacteriologist made the experiment of testing his own sputum after walking thru a densely populated part of New York City on a windy day. I believe he found over twenty varieties of pathological micro-organisms including tubercle bacilli.

It is when the invasion of the tubercle bacilli becomes too great for the resistance of the host that the Bio-Dynamo-Chromatic method of diagnosis shows the condition. So far

as I can ascertain, this is the only method that wil enable the physician to detect this pathological condition at its very beginning.

Waiting to find the tubercle bacilli is equivalent to waiting to see what the autopsy wil show. It is Prussianism—"Kultur" in medicin.

Case 171

Lady 26 years old. Had nervous symptoms "from some unknown cause." Was referd to me for diagnosis after having been to many physicians and surgeons, no two giving the same diagnosis.

Upon examination I found she gave a normal MM VR but had a peculiar functional hart condition, which I diagnosed as being causd by "maskt goiter" or hyperthyroidism. As no enlargement of the neck was visible at that time, my diagnosis was not heeded. Within a year anyone could see the enlargement of the neck.

She then came to me for treatment. By means of the pulsoidal current and zone therapy, along with the powerful-incandescent-lamp radiations, all the nervous symptoms cleard up, the enlarged gland subsided, her hart became normal, and she said she was wel. She appeard wel and I believe she was wel then and is now wel tho she has not had treatment for over three years.

Case 172

A man about 40 years old was brot to me by one of his physicians who said he had known the man for 20 years and had treated him 12 years for a cof.

This man had been diagnosed by many doctors as having tuberculosis and by some as having syfilis.

According to the Bio-Dynamo-Chromatic method I could definitly say that he had no tuberculosis, syfilis or cancer. By carefully studying his reflexes, I diagnosed his case as "habit cof."

I gave the man two zone therapeutic treatments and his physician followd them up for a short time when he pronounst the case cured. For over three years this man has had no cof and he is in the best of helth.

Treating this man's symptoms would never hav cured him, as his symptoms might hav been causd by very many different conditions. Treating his reflexes, however, cured him.

Case 173

Man 32 years old. Married. Mural artist. Had severe pains in right inguinal region for over a week. Had seen two surgeons, who told him he had *appendicitis,* and the morning of the day I saw him arrangements wer made for an operation. He came to me in the evening, complaining of unbearable pain located about the cecum. He said that he was supposed to be at the hospital for an appendectomy the following morning, but had been advized to see me first.

I gave him about four ounces of pure hydrocarbon oil, then put him on the table with the high-candle-power lamp as close to his abdomen as he could bear it. I kept him in that position for about two hours, after which I began carefully manipulating the painful area, from which the pain had disappeard. I palpated a hard mass about two inches in diameter. This mass I found was movable, and I began carefully pushing it up and thru the colon. Within half an hour I had it in the descending colon, and within three hours from the time he came into my offis he past a scybalum about two inches in diameter, along with a quantity of other fecal matter. He went home feeling wel, with the exception of being a little weak. He sent word to the surgeon that he would not be on hand for the operation.

The next morning, he came into my offis and I gave him an hour's treatment with the light and also another dose of oil. I gave him another treatment the same evening. After that I gave daily treatments with the big lamp over the abdomen for a week. All pain and soreness wer gone by that time and he was in perfect condition. For eight years he has had no return of the trouble.

Treating this man's symptoms would never hav helpt him. The correct diagnosis was the main factor—after that the treatment was easy.

Case 174

Miss J. Age 26. Severe pain in right inguinal region and tenderness over McBurney's point. Diagnosed by her former physician as *appendicitis* and operation advized. When I first examind her, she could not bear the weight of the hand on the tender spot. Radiations from a high-power lamp wer given for 20 minutes over the tender area, whereupon it could be palpated without any signs of pain. Prescribed pure olive oil, one tablespoonful three times daily.

The following day only slight tenderness was present, which was quickly relievd by light applied 10 minutes over the right inguinal region, and 10 minutes over the left, and the same over the lumbar region. The third day there was no tenderness. Light was also given over the entire body, along with sinusoidalization, to relieve the constipation. Same treatment given the fourth day. After the sixth treatment, the bowels and general condition wer so much improved that I considerd her wel. It is eight years since the treatments, and there has been no return of the trouble.

Operation would not hav cured this patient. The diagnosis was the all-important factor.

Case 175

Lady 23 years old. Had been treated for two years for malaria. She did not improve and was referd to me for diagnosis. By means of the Bio-Dynamo-Chromatic method I diagnosed her as having *incipient tuberculosis*. She was treated according to the methods abov set forth and within a few months she was wel and has remaind wel for several years.

Case 176

Young man 18 years old. Had been treated for two years for catar of the bowels and stomac. As he had not improved he was sent to two or three specialty diagnosticians. One diagnosed his trouble as some affection of the internal secretions. Another as infection from the tonsils, and another diagnosed the case as inherited syfilis.

When he was brot to me I diagnosed him by the Bio-Dynamo-Chromatic method as having tuberculosis and began immediately treating him with powerful incandescent light over the chest, abdomen, and back,along with soluble, stainless iodin, iodin therapy, and oxygen-vapor with B-D-C therapy. I advized hygienic living and nourishing food but not stuffing, and sleeping out of doors. Also imprest upon him that he must do deep breathing at all times.

Within one year this patient was entirely wel and has remaind wel.

It was proved that this patient had tuberculosis as it happend that he had a coffing spel and raisd some flem from deep down. This was examind for tubercle bacilli and many wer found.

Case 177

Single lady 34 years old. Was being treated for tuberculosis. She had consulted many T. B. specialists and they all agreed that she had tuberculosis. A friend referd her to me and by means of the Bio-Dynamo-Chromatic method I diagnosed her as having *auto-intoxication* but no tuberculosis. One month's treatment by means of the powerful incandescent lamp, B-D-C therapy, oxygen vapor, and suitable diet aided nature so that she was cured and has remaind cured.

Case 178

Lady 55 years old. Had been treated for tuberculosis for years but she did not improve. She had a hacking cof. She was referd to me by her latest physician and by means of the Bio-Dynamo-Chromatic method of diagnosis I was able to say that I knew she had no tuberculosis. By other methods I diagnosed her as having *cardiac neurosis*. Drugless treatment for cardiac trouble aided nature to cure her and she has remaind wel for several years.

Treating this lady's symptoms would not hav cured her as she had been to some of the best Homeopaths.

Case 179

Lady 50 years old. Referd to me as hopelessly sick from an unknown cause. She had been to the best known physicians and no one would venture a diagnosis but all made findings as hopeless.

By means of the Bio-Dynamo-Chromatic method she was diagnosed as having *tuberculosis*. She began treatments following out methods as abov stated and within one year was wel and has remaind wel for three years.

Case 180

Single lady 24 years old. Had a large lump in the left brest which was diagnosed by cancer specialists as cancer. Immediate operation was advized. By means of the Bio-Dynamo-Chromatic system, I diagnosed her as having *tuberculosis*.

My tecnic for treatment was as follows: I used the radiations from a 2,000-candle-power incandescent lamp over the chest and brest daily. About 10 minutes after the

light had been radiating on the chest and brests, I anointed them with iodex, which is a preparation of soluble, stainless iodin. I then allowd the light to radiate on this part of the body for 20 minutes more. While lying on the table under this light, I instructed the patient to do deep thoracic and abdominal breathing, inhaling while counting four, holding the breth while counting eight, and exhaling while counting eight. After the radiant light treatment on the chest, I gave the same for 10 or 15 minutes over the thoracic region of the back. After that I put her into a dark room where she could inhale oxygen vapor, carrying out the deep breathing exercizes while taking this for 40 minutes. At the same time I gave her B-D-C therapy.

I advized the patient to sleep out of doors, do deep breathing continually and eat nourishing food, but no more than she could easily digest.

Within three months the lump in the brest had entirely disappeard and the young lady gave a normal MM VR, so I knew she was wel. She was convinst that she was wel, and the fact that there has been no recurrence for several years proves that the diagnosis of tuberculosis must hav been correct.

The following was reported by F. C. E. Schneider, M.D., Peru, Ill., under date of Jan. 3, 1918:

Case 181

Single lady 38 years old. Came to me three years ago complaining of vomiting everything she ate. Case had been diagnosed by specialists and surgeons as *cancer of the stomac*. Immediate operation was advized but the patient was too weak. She was sent to me to "bild her up." She had been in bed three or four months previous to coming to me.

It took me just 15 minutes to test her by your Bio-Dynamo-Chromatic method. She gave a C-MM VR and I told her I was *sure* she had no cancer. Upon examining her further, I found she had an enlargement in the right iliac region. She said she was very much troubled with constipation. *My diagnosis was auto-intoxication along with uterin fibroid tumor.*

I treated this lady with positiv galvanism and deep manipulation to relieve pressure as much as possible about the tumor, after which the tumor seemd about half its original size. I tested the patient a few weeks later by the B-D-C

method and she gave a normal MM VR, showing that her auto-intoxication was relievd.

The first day I examind her, energy could be conducted from the pyloric end of the stomac with the receiving terminal eight inches away. The next time I examind her, it could not be taken more than one inch away.

I advized an operation as I considerd the tumor could not be reduced any more in size. About eighteen months ago she was operated upon and a benign fibroid tumor of the body of the uterus was removed. There wer some adhesions around the cecum and appendix. The patient made a good recovery and has gaind 35 lbs. since. At the present time she is apparently in perfect condition.

The following report was recently sent me by William Warnick Bailey, M.D., Davenport, Iowa:

Case 182

Sometime ago I diagnosed a case by your Bio-Dynamo-Chromatic method as *tuberculosis* of the spine. As the patient was unable to stand, I used a subject in an adjoining room and conducted the energy thru one of your energy conductors from the patient's spine to the subject. This spinal energy was dissipated by the *A*-Chromatic Screen. It was for that reason that I diagnosed the case as tuberculosis.

This patient's appearance indicated a *probable* syfilitic condition, but as the B-D-C method did not show syfilis and did show *tuberculosis,* my experience made me *sure* that it was a tuberculous spine rather than a syfilitic one.

There was no temperature abov normal at any time. I hav just come from Mercy Hospital where I witnest a surgical operation on this case. The 11th and 12th thoracic vertebræ wer ruf and nodular and from the enlarged glands the laboratory diagnosis was tuberculosis.

You can now see why I am so enthusiastic over the Bio-Dynamo-Chromatic method of diagnosis and why I am now getting more actual enjoyment from the practis of medicin than I had before in eighteen years.

The following thirteen cases wer reported by Orin W. Joslin, M.D., Medical Director of the Dodgeville General

Hospital and Pine Grove Sanitorium, Dodgeville, Wis., under date of Jan. 5, 1918:

Case 183

L. D. Lady aged 24. Came to the hospital stating that she had herd we claimd to make diagnoses without taking the history. We proudly admitted it and promptly proceded with your Bio-Dynamo-Chromatic method of diagnosis.

According to this method the diagnosis was "tonsilitis toxemia with complications of the urinary tract." The patient had a fixt idea that she had tuberculosis, but the B-D-C method of diagnosis absolutely eliminated it. She told me she had been to several of the best specialists she could find in New York City and they had informd her that she had pulmonary tuberculosis. She had given up several good positions on the strength of the fact that she thot she had tuberculosis.

Later she went to a university clinic where radiografs wer taken of her lungs and they told her that she surely had pulmonary tuberculosis. As far as we could lern these other diagnoses wer made on the strength of the findings of x-ray plates and the fact that she had felt languid and ran a temperature of about .6 of a degree in the afternoon.

She finally admitted that she believed our diagnosis was correct because she had had numerous attacks of tonsilitis during her last year in High School and had felt languid ever since and that she had had bladder trouble since she was a girl. So far as she knew she had no other trouble.

She returnd to the university clinic where she had previously been and told them that she knew now she had no tuberculosis. They took more radiografs and did more talking and finally got the patient thoroly confused again. A few days later she returnd to the hospital, telling us she had brot a patient for a "test diagnosis" and did not want me to even see the patient until he was in the diagnostic room and prepared. This was done and I was sent for and introduced to a man about 40 years of age and as perfect a picture of helth as one could find. However, I promptly diagnosed the case by the B-D-C method as pulmonary tuberculosis, locating the exact lesions in the lungs by the same system.

As soon as the young lady herd this diagnosis, she threw up her hands and said, "That is sufficient. I am convinst now." Then she askt the patient to show me a letter. He produced a letter from the Mayo Brothers' Clinic, from whence he had just returnd, which showd a diagnosis of pulmonary tuberculosis and that only.

Case 184

Mrs. L. Aged 32. Diagnosed by the B-D-C method as having pulmonary tuberculosis. Large cavity in both lungs. Severe hemorrhage about every week or two. Menstruation profuse for two weeks. Quite emaciated.

Has now been under your "condenst-out-of-doors" treatment for about two months. Menstruation has been normal and she has had only one small hemorrhage. She has bilt up wonderfully in every way and has gaind ten pounds.

Case 185

M. H. Man, aged 42. B-D-C diagnosis pulmonary-laryngeal tuberculosis. He had it four years and had been at the city sanitorium but was getting worse. When he came to us, his voice was entirely gone and he was terribly emaciated. He certainly lookt a hopeless case. We promist nothing but put him under treatment, which consisted of B-D-C therapy, oxygen-vapor, radiations from the 3,000-candle-power lamp, quartz light, and auto-condensation. After eight months of this treatment he said he never felt as wel and was never in as good condition in all his life. He stopt taking treatments altho he was told he was not entirely cured because he stil reacted to the *A*-Chromatic Screen, thus indicating that there was stil a lingering tuberculous condition present. He said he was wel enuf to suit him and he knew he would recover now under home treatment. Up to the present writing he has been working every day for about three months and is in fine shape. His voice has entirely returnd.

Case 186

J. S. Man, aged 64. Without asking him a question, he was diagnosed by the B-D-C method within five minutes, said diagnosis being *carcinoma* involving the lungs, stomac,

and bowels. He then told us that he had been diagnosed at Rochester, Minn., about a month before and had spent *two weeks* there to get a diagnosis, which was the same as we had made by the B-D-C method in *five minutes*.

He was in terrible pain and his stomac and bowels wer so plugd that not even water would pass thru them. We gave him milk to drink and 30 minutes after exerted pressure over the 5th thoracic vertebra. This spinal stimulation was repeated and apparently was successful in dilating the pylorus, as liquids wer all retaind. By spinal stimulation at the proper centers we wer soon able to empty the bowels from what seemd to be a complete obstruction. After three weeks' treatment patient had free bowel movements almost to the point of diarrhea.

We hav controld his pains by means of zone therapy, so much so that after the fourth day he has had no pains at all. This man is stil in the hospital under treatment and is probably too far gone to be cured, but the abov is a good opportunity to compare some of the newer methods with the old in both diagnosis and treatment.

Case 187

Mrs. G. H. Aged 40. Without asking a question we diagnosed her by the B-D-C method as having carcinoma of the lungs and stomac. Her history, which she later gave, was that she had been treated for pulmonary tuberculosis for about 10 years and had even been treated in the City Tuberculosis Sanitorium. Their diagnosis was practically made because she was emaciated and because she had almost daily hemorrhages of the lungs even up to the time she came to see us. When she came to us she hardly had strength enuf to walk upstairs. Was suffering with severe pains thru the chest and stomac and was scarcely able to swallow, due to an obstruction, and could scarcely sleep at all.

A large, hard tumor of the stomac was plainly palpable. We put her on oxygen-vapor, B-D-C therapy and other natural methods which we use for cancer, and she responded from the first day. Inside of a week she could hardly get enuf to eat; she slept wel; gaind considerable strength; and was free from pain. She has been under treatment for nine months. Looks and feels better than she ever was in her life she says. Had had no hemorrhage since her first treatment and no tumor can now be palpated in the stomac.

Later Dr. Joslin has written me as follows:

Regarding Mrs. G. H.'s case, reported to you some time ago, would say that for six months the treatment consisted of radiant light from the 3,000-candle-power incandescent light, oxygen-vapor inhalation, and B-D-C therapy. After she had been in our institution for several months, Dr. T. Howard Plank of Chicago visited our hospital and I had him test her out by the B-D-C method. He found the MM-VR reflex line one finger's bredth below the working line. At the time I could not help but doubt his findings, and I almost doubted my own as I had never expected to cure this case and told her so thru her course of treatment. After ten months' treatment I found she had a normal MM-VR. This woman now appears to be absolutely wel and clinicically she certainly is wel. She says she has not felt so wel since she was a girl.

This makes me feel that there is hope to cure cancer anywhere and in almost any stage.

Case 188

Mrs. K. Aged 52. B-D-C diagnosis was carcinoma of the stomac. After diagnosis, we took her history and found that she had been to another physician who employs the Bio-Dynamo-Chromatic system and he also made the same diagnosis—that is, unbeknown to me, he had obtaind a *B*-MM VR the same as I had. This shows that the B-D-C method of diagnosis is not a "one-man system."

Case 189

J. M. Man, aged 32. Malignant looking tumor on condyle of upper jaw. Gave a pronounst *C*-MM VR, and energy conducted from this tumor was dissipated by the same screen. According to this diagnosis the case was *syfiloma*. He reported that he had been to one of the best surgeons of the city, who had evidently diagnosed it as epithelioma as patient had been thoroly cauterized with galvano-cautery at two different times and had had a thoro course of x-ray treatment, all of which had very evidently made his condition worse.

He has now been under syfilitic treatment with us for about a month and his condition is fully 50 per cent. improved. Had the other physician been able to make a correct diagnosis, he of course would have effected a cure.

Case 190

V. T. W. Man, aged 32. Gave a *No. 26*-MM VR. Consequently I diagnosed his case as nicotin poisoning. I then askt him if he ever smoked and he replied "Only between meals." He said he was seldom without a cigar in his mouth. As he had no other bad habits, we attributed the cause of his nervous condition to tobacco. Suitable treatment proved the diagnosis to be correct.

Case 191

W. E. Man, aged 48. Gave a *No. 35*-MM VR. Consequently we diagnosed his condition as *alcoholic toxemia*. His history showd that he had "periodical lapses."

Case 192

M. S. Single lady, aged 30. Without asking her a question we diagnosed her case by the B-D-C method as gonorrhea. At first she denied any possibility of having this infection but after a careful history taking she finally recald the occasion where she knew she contracted gonorrhea several months previous and said that from that time she had had profuse leukorrea and had been "sick all over."

The only treatment she received from us was autotherapy (Duncan), radiations from the 3,000-candle-power lamp, quartz light, oxygen-vapor, and B-D-C therapy. In three weeks' time she was practically wel, said so, and lookt so, and gave a normal MM VR.

Case 193

Mrs. R. Aged 26. Gave a *D*-MM VR. Therefore we diagnosed it as gonorrhea. After informing her what she had, she told me she had contracted gonorrhea six years previous and told her doctor so but he did not believe it. He gave her a little medicin for leukorrea and let it go at that. She did not take any treatments from us but simply came for diagnosis as she was not feeling wel, but never thot but that her gonorrhea had been cured years before.

Case 194

Mrs. C. H. Aged 28. Gave a *D*-MM VR—diagnosed gonorrhea. Laparotomy was performd on her the day fol-

lowing the diagnosis. We found she had cystic ovaries and Fallopian tubes wer ful of pus. Laboratory findings proved the B-D-C diagnosis to be correct.

Case 195

G. S. Man, aged 56. Gave an MM VR when radiating light thru your Crescent Series No. 26 Screen. This screen came with a large shipment of Chromatic Screens just as this man came in for diagnosis, and I had not yet seen the interpretation for this screen. I askt my secretary to look thru the mail and see if the "key" to your Crescent Series Chromatic Screens had yet arrived. She found it and told me that screen indicated nicotin poisoning.

Following this diagnosis the man told us he knew we wer right because he had been an inveterate user of tobacco, that he had to giv up smoking but took to chewing and had fairly eaten tobacco ever since, but had recently given it up because his stomac had gone back on him. We immediately put him on a diet, at the same time giving him eliminativ treatment, and his stomac is practically wel and his general condition greatly improved.

The following case Dr. Joslin reports under date of Feb. 2, 1918:

Case 196

Lady had a large cancerous tumor which could be easily palpated thru the stomac to the left upper hypocondrium. A gastrojejunostomy was performd on her about five months ago by one of the best surgeons in Wisconsin. The surgeon gave her three months to liv.

She came to us for treatment about five weeks after the operation. She had a very pronounst cancer-MM VR, and was terribly emaciated and anemic. I did not mesure the strength of the lesional energy in ohms at that time but after she had been under treatment for thirty days I found that her energy gave 6 ohms. The resistance about thirty days later was 5 ohms, and about six weeks from that time I found it gave 11/25 of an ohm.

It certainly looks as tho the cancer toxemia is rapidly disappearing. She is in very much better condition in every way than she was, but strange to say the tumor is no smaller.

I am now wondering if it is possible to turn a malignant tumor into a benign one. At any rate her general helth is greatly improved and I am reporting the case for the benefit of any who may hav a similar one.

I never gave this woman any hopes of even relieving her; but my experience with cancerous cases, following out your new tecnic, has put me mentally where I would not be surprized at anything in the way of progress with anv of these unfortunate cases.

Another case of Dr. Joslin's:

Case 197

Man in the 50's. Had been to Rochester, Minn., and other places where a diagnosis could not be given. About eight months ago I diagnosed him by the B-D-C method as having cancer of the liver, and gall bladder. He resented the diagnosis and the price he paid for it. I happend to see him yesterday and he is now a pitiable sight. When I first weighd him he weighd 262 pounds, and lookt to be in good helth. Now he is terribly emaciated and deth is written all over his countenance. Anyone can now see and realize that he is dying from cancer.

Your B-D-C- work is certainly a revelation, and it givs us a continual round of surprizes, both plesant and otherwise.

The following is just reported to me by Dr. Joslin as this mss. is going to the printer:

I hav just returnd from a two weeks' visit in New York City where I made twenty-five diagnoses for some of New York's most eminent physicians, and in each case the diagnosis was verified by the other physicians present. Not one question was askt and not one word of history was taken before the diagnosis by the B-D-C method was made.

I diagnosed eighteen cases in succession for one physician, the patients being all of the "better class." I found them intensely interested and appreciativ. Several wer enthusiastic almost to the stage of excitement. The first patient that one doctor brot in was his own wife, whom I diagnosed as having pronounst liver intoxication with epilepsy. The diagnosis was correct and from that moment the skeptical doctor was converted into an enthusiastic believer in

Bio-Dynamo-Chromatics. He said that his wife had had terrible liver trouble for years and for the past twenty years had had epileptic seizures.

Out of the eighteen cases examind I found three other epileptics, all diagnosed by your Crescent Series Screen No. 105. Many of the other cases wer equally interesting, but nothing surprizes me any more in this work.

My great wish now is that every live physician would lern this work for the good of all humanity if for nothing else.

The following report was receivd from Louis N. DePeyre, M.D., Colorado Springs, Colo., under date of Jan. 10, 1918:

Your Bio-Dynamo-Chromatic method of diagnosis is certainly wonderful. By its means I am able to diagnose with a certainty that I never supposed to be possible, and the results which I hav had from following the conclusions that this method of yours givs hav been uniformly of a sort to reassure me of its entire reliability.

Only a few weeks ago a physician consulted me regarding an abscess case. By your B-D-C method I diagnosed the case as syfilis and after three weeks of syfilitic treatment the patient began to improve.

My uniformly good results from the use of the powerful incandescent light, oxygen-vapor therapy and B-D-C therapy hav made me many friends.

The following report was receivd from J. F. Roemer, M. D., Waukegan, Ill.:

I am using your Bio-Dynamo-Chromatic methods with the best kind of success and with complete satisfaction to both myself and the patient. It has helpt me in determining the exact treatments in a number of cases and to verify my findings in other methods. In all cronic work I find it almost indispensable.

Otto Sporleder, M.D., Reedsburg, Wis., reports the following:

Case 198

Mrs. E. N. Il 6 months. By the Bio-Dynamo-Chromatic method Oct., 1917, she reacted to *A*-Chromatic Screen and *A*'-Chromatic Screen only. Energy-conducting method localized the tuberculous process in upper lung.

Fysical examination showd consolidation in the indicated area. Temperature 103.8, puls 120, respiration 28. Hacking cof but no sputum. Complaind of daily severe chils and drenching night swets, constant loss of weight and extreme weakness.

Treatment: 2,000-candle-power light, oxygen-vapor, intermittent A^1-Chromatic Screen (B-D-C therapy), nutritious diet, rest, and fresh air.

Chils and night swets stopt after first ten days. Jan. 1, 1918, temperature never in excess of 99.6, puls between 80 and 90, respiration 22, has gaind 5 pounds in weight, and feels stronger.

Examind her a few days ago and she reacted to *A* and A^2-Chromatic Screens, which is entirely in keeping with the improvement in her condition.

This case could hav been diagnosed correctly by older methods. I mention it for this reason. After I had made the diagnosis without knowing anything whatever about her condition or history, and without any fysical examination, and had mapt over the diseasd area with a skin-marking-pencil according to your energy-conducting method, without percussion over lungs or using the stethoscope, the patient produced an x-ray picture taken two weeks before, which showd exactly the same area involvd.

What a demonstration of the accuracy of the B-D-C system!

Case 199

Mrs. E. V., 57 years old. She was brot to the offis by Dr. Hanks of Loganville, Ariz., for diagnosis three months ago.

Patient gave a pronounst *A* and *B*-MM VR. I could elicit energy from the regions of the stomac and sigmoid. For the benefit of the doctor, I demonstrated this energy by the offis attendant who has a normal MM VR.

Diagnosis: Carcinoma of stomac and (probably) sigmoid.

Patient had a severe hemorrhage from the bowels six days after the examination and died a month ago of cancer of the stomac.

Case 200

Mrs. S., 63 years old. This patient was referd to the hospital for an operation on the gall bladder by her family physician. Had this trouble for years.

The surgeon requested B-D-C diagnosis which I made. She reacted to *A* and *B*-Chromatic Screens, and I located the malignancy in the liver and possibly the gall bladder. The surgeon declined to operate.

The family physician said yesterday, three months after the examination, that the condition is self-evident now, and that she is expected to die at any time.

Case 201

Miss H. Il since erly in November, 1917. Complaind of pelvic pain, particularly on right side. B-D-C diagnosis showd *D*-MM VR only.

Fysical examination reveald a large mass on right side of pelvis and pyosalpinx on the left side. Referd to hospital. Removed mass consisting of right ovary, tube, and inflammatory tissue, and large pyosalpinx on left side. *Pus showd gonococci.*

Case 202

Miss C. T., aged 17. I saw her in consultation. The physician had diagnosed her as having appendicitis and referd her to a surgeon. The latter requested B-D-C diagnosis, which showd patient to hav decided *D*-MM VR. Operation showd double pyosalpinx in the initial acute stage.

I believe that this case could hav been cured by B-D-C therapy, 2,000-candle-power light over abdomen, quartz light thru vaginal speculum, and oxygen-vapor, in which case it would not hav been necessary to sterilize a girl of seventeen.

Case 203

D. A. J. Physician very skeptical regarding B-D-C work. Wanted to know if he was stil "fairly normal" as I had found him some two months ago. I did not suspect anything. He had an abnormal MM VR and I found he reacted to *No. 106*-Chromatic Screen—*tonsilitis*. His face was a study when I askt him what he was doing for his

sore throat. He " 'fessed up" and said that he was testing me and the system. He is now prepard to "believe anything" I tel him as he exprest it.

The following cases wer reported by S. Edgar Bond, M.D., Richmond, Ind., under date of Jan. 20, 1918:

Case 204

Miss M., aged 20. Was sent to me from a nearby city for diagnosis. Altho tuberculosis was suspected, the fact that no notisable pulmonary lesion could be found and that no tubercle bacilli could be determind, the diagnosis was very enigmatical.

By means of your Bio-Dynamo-Chromatic method of diagnosis I was able to say with a certainty that she had tuberculosis. Careful percussion and palpation reveald the fact that there wer small, suspicious nodules in the abdomen. My diagnosis was tuberculosis in the bowels. The autopsy confirmed my diagnosis.

Case 205

Mr. H. Had been diagnosed by other physicians as having ulcer of the bowels with congestion of the liver. Complaind of weakness yet appetite was good.

By the B-D-C method I was able to say that he had cancer of the liver involving the pyloric end of the stomac. Later developments proved the diagnosis to be correct.

Case 206

Mrs. E. Aged 33. Diagnosed as pregnant. Throbbing was deep over the left iliac region. Traces of sugar in urin. Careful local examination reveald a partial prolapst left ovary, womb enlarged—endometritis. Unless I could do something for her speedily the operating room seemd to be the only place for relief.

My diagnosis was procto-sigmoiditis extending to entire abdominal area including womb, ovaries and adnexa. Local uterin treatment, procto-sigmoidal irrigations and applications, and what seemd to be the best of all—radiations from the powerful incandescent lamp over the abdominal area and lumbar region and application of the slow-sine

wave to each side of the 6th and 7th thoracic vertebræ practically cured this woman. Treatments wer given two or three times a week over a period of about three weeks.

Dr. Bond also reports that he has had remarkable success in treating infantile paralysis by means of the powerful incandescent lamp, deep massage, traction, and when necessary the selectiv use of the slow-sine or interrupted-rapid-sine or galvano-sinusoidal currents.

The following report was receivd from C. C. Waltenbaugh, M.D., Canton, Ohio, under date of Jan. 26, 1918:

Altho it is only a few months ago since I lernd your Bio-Dynamo-Chromatic method of diagnosis, yet the more I use it, the more dependable I find it.

Case 207

Young married woman. Mother of one child. Gave a *B*-MM VR. Consequently I diagnosed her as having cancer somewhere. Upon questioning the lady, she said she thot at times she could feel something in her abdomen. After a careful examination, a growth was found just below the navel in the median line, and cancerous energy could be conducted from it with the receiving terminal six inches from the body.

Case 208

Man past 40 years of age. Gave a *D*-MM VR. When I told him that it ment gonorrhea, he said he rememberd having it twenty years before. He was surprized that I was able to find it now, as he thot it had been cured years ago.

I hav hundreds of reports from physicians, all along the same lines as those abov given, but many of them askt that their names be not publisht. This is too bad, as names lend weight. Nevertheless this new work is forging ahed in spite of all impediments.

During the year 1917 I was honord by three calls from Eugene B. Nash, M.D., the famous homeopathic writer and teacher of Cortland, N. Y. After having herd my explanations of the Bio-Dynamo-Chromatic system of diagnosis and after having seen some demonstrations in that

line, Dr. Nash said that he considerd it the greatest advance in diagnosis of modern times and that wer he a young man he surely would devote his life to it.

Many ar not aware of the fact that Dr. Nash was not only a famous homeopathic prescriber and writer on homeopathic subjects, but he was an accomplisht musician with a keen ear, and therefore he appreciated all the more the marvelous underlying fysics of Bio-Dynamo-Chromatic Diagnosis.

Case 208a

Just after this mss. had been prepared, I receivd the following in a letter under date of March 6th from the husband of Mrs. S.:

"My wife is in the best of helth and one can scarcely realize that she was so afflicted as was the case before she saw you a year ago."

This case was a lady 42 years years of age sent to me from the east for diagnosis as to the cause of her asthma and for treatment. By the B-D-C method I diagnosed her as having incipient tuberculosis, and began treatment accordingly, using nothing but condenst out-of-doors treatment, and a breathing tube for breathing exercises at home. Regulated her diet and told her to be in the sunlight as much as possible. After taking daily treatments for ten weeks I considerd she was wel enuf to go home.

Conclusions

My experience in general teaches me that *common sense* must be the greatest factor in diagnosis. Experience also teaches me that to specialize in any one branch of diagnosis is very dangerous. It makes the viewpoint too limited. To ride one hobby horse in the medical profession is very hazardous as that horse might fail to bring one home. It is better to hav several horses, so if one goes lame another can take its place.

Any diagnostician who diagnoses simply "to concur" with the opinion of someone who cals him, is a criminal.

I hav found that many diagnosticians ar "heelers" or "runners in" for surgeons.

Nose and throat specialists too often lay all ailments to the tonsils. Nature put the tonsils at the gateway of the

upper opening of throat to protect and stand gard. It seems to be a vicious fad to take them out. No one has improved upon nature yet, and no one ever wil. I could fil a big book with case records of those whose tonsils had been cald "bad," "rotten," "cesspool," "poison carriers," etc., in order to disgust the owner and induce him to be operated on. *Is not commercialism at the bottom of the "tonsil scare?" I think it is.*

Gynecologists too often try to frighten their patients into the idea that they hav cancers. Only recently a very wel-known gynecologist in open meeting in New York advized all doctors to send every woman, young or old, to a gynecologist at least once every six months to be examind for "growths," and if a "lump" wer ever found to call it "cancer" as the public had now been educated to know that cancer "could be cured only by radical operation." Imagin the mental condition of women if they had *cancer* imprest on their minds and pland for a "thoro going over" every six months to see if they wer free from the "dedly lump."

Every physician should know how to diagnose in a general way. Every diagnostician should be a general diagnostician, for the body as an entity must be diagnosed to arrive at the correct conclusion.

Every consultant should mentally place himself in the position of his patient and ask himself how he would want to be advized in case their conditions wer reverst.

Keep the *Golden Rule* uppermost in your minds and cultivate common sense, and do not ignore nature and natural methods.

In concluding this lecture, I want to voice the sentiments of Judge W. W. Canfield of the Superior Court of Whitman County, Wash. In an address before a medical society on the subject *"The Family Physician from the Lawyer's Viewpoint,"* he said, as reported in the *Medical Sentinel*:

"The serious responsibility of advizing a surgical operation should never, in my judgment, be assumed by any man who would perform or in any manner profit by the operation, and that whenever you ar consulted as to the necessity or propriety of an operation, you should be debard from performing or profiting by it by the ethics of your employment.

"Every operation which results in the deth of the patient from the operation is a homicide, both as a matter of law and as a matter of morals. It is no excuse either in law or in morals to say 'the patient would not hav long survived.' That could be said with truth of every patient and of every human. None of us can long survive, yet not only the law but good morals fixes the responsibility for homicide upon the *proximate* cause of the deth, and I am persuaded that the surgeon and his innate desire to cut is the proximate cause of many a deth.

"I therefore urge that you make it one of the articles of your religion never to perform, or assist in the performance of, or profit by, an operation about the avisability of which you hav been consulted."

God speed the day when this wil become a National law. Then, and not until then, wil the trusting community be spared from the murderous nife of the surgeon fanatic or the money-mad butcher, who poses in our very midst as a "medical friend in need," but is in reality the worst villain that walks amongst us.

PART FOUR

EXERCIZE

Under this hed volumes could be written. It covers nearly the whole relm of Fysical Therapy.

Exercize is *Activ* and *Passiv*.

By *Activ Exercize* is ment that which requires the exercize of the wil. This may be subdivided into that form of exercize which requires effort and into that which requires endurance. By carefully considering the difference between exercizes of effort and endurance, one can avoid many of

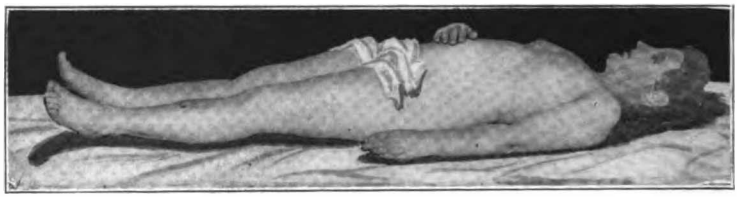


Fig. 194. Showing position for deep abdominal breathing exercizes. Notis the hand on the abdomen. The patient should watch the hand and see how high she can elevate the abdomen at each inspiration.

the pitfalls that await the over-zelous exponent of any one form of exercize.

The increase in blood pressure, puls rate, and respiration indicates the effect the exercize has on the individual. By knowing our patient, as wel as the scope of various exercizes, we should be able to prescribe quite accurately the form of exercize best suited to bring about the reactions sought for.

Deep Abdominal Breathing for therapeutic use is an activ exercize. It is one of our most valuable adjuncts to all other forms of treatment. The tecnic for deep breathing is as follows: (Fig. 194.)

Hav the patient loosen all tight clothing and lie on the back. Hav her place one hand on the abdomen and inhale

in such a manner that the lungs gradually push the diafram downward and elevate the abdomen. Instruct the patient to do this deep breathing exercize every night and morning for twenty times while undrest, and as often as possible during the day. Hav her watch the hand and see how high she can elevate the abdomen during inhalation. This centers the mind on the exercize, which is of great importance. Inhale slowly, occupying about four seconds. Hold the breth at least twice as long as it required to take it in, and take as much time to exhale as the breth is held. This tends to open up the alveolæ of the lungs and increase lung expansion.

Rythmic breathing—counting four while inhaling thru the nose, holding the breth while counting eight, exhaling thru the nose while counting eight—I find to be the ideal system.

While doing the deep breathing exercize, hav plenty of fresh air in the room. After this exercize has been practist for a few weeks, the patient wil notis that she breathes more and more deeply without being conscious of it.

By *Passiv Exercize* is ment that form of exercize which does not require the application of the patient's wil. It includes Massage, Vibration, and Mecanical Manipulation.

To improve the nutrition of any muscle or set of muscles, giv such exercize as to contract same and *giv them time to react.* Many modalities ar employd to improve the tone of a muscle, when in reality the muscle is impaird, because of the manner of the application. The prevailing faulty tecnic in exercize is overdoing the treatment or making the stimulus so rapid that the muscles cannot come back to rest before the succeding stimulus is applied.

During any exercize, *encourage deep breathing.* This aids in throwing off the extra catabolic products. Be careful in giving or prescribing too hevy exercize of any kind to persons past thirty years of age. Exercizes which increase the tone and contraction of the abdominal muscles wil go a long ways towards driving away "the blues." Flexion and extension *against resistance* wil do much in the way of bringing blood to the parts and increasing the tone of the muscles.

It has been proved that the mind has a great effect upon the nutrition and development of muscles. It is for this reason that all exercizes should be done, as much as possible, before a mirror. This causes the individual to watch just what is taking place.

The following ar some Special Exercizes that I hav found beneficial:

Referring to Fig. 195, *A* and *B* represent the thigh-flexing exercizes to be taken before arising. It is not neces-

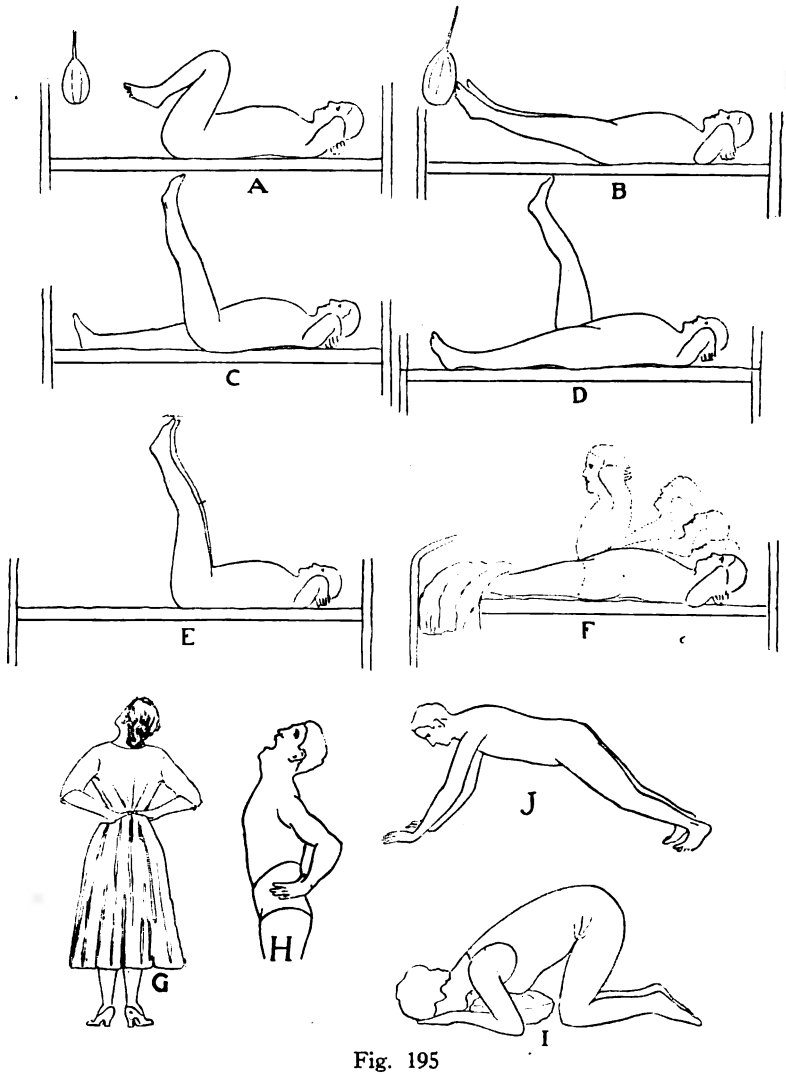


Fig. 195

A, thigh and leg flexion; B, thigh and leg extension; C, left thigh extension; D, right thigh flexion; E, both thighs flext; F, flexing trunk on thighs; G, poise for neck extension; H, jaw extension; J, walking on-all-fours; I, nee-chest position.

sary to hav a football suspended over the foot of the bed, but the illustration shows how this exercize is to be carried out.

Do not allow the feet to drop while doing this exercize.

C and *D* represent the alternate raising and lowering of the right and left leg.

E represents the raising of both legs together.

F represents the feet held down by the bedclothes and the trunk flext on the thighs in the manner illustrated. After one becomes proficient in this exercize of flexing the trunk on the thighs, it can be done without any weight on the feet.

Each of these exercizes should be repeated from five to twenty times every morning.

Extending the neck as in *G*, having the hands about the waist with thums to the back, is the exercize for stimulating the sympathetic-vagal reflex, and is especially indicated in goiter and in hart disease.

It is also very beneficial for strengthening the vocal cords and developing the neck.

This exercize is executed in the following manner:

With the neck flext, *slowly* extend it until looking strait at the ceiling. Then just as *slowly* bring it back to the flext position again. This special exercize should be repeated twenty times or more twice daily.

H in the same Fig. represents hyper-extension of the lower jaw. The hands should be placed as in Fig. G. This exercize is of markt benefit for public speakers, elocutionists, and singers. It is also very beneficial for strengthening the vocal cords and for stimulating the tonsils and salivary glands.

This exercize should be done *while alone*, and the opening and closing of the jaw should be carried on *slowly*. The reason it should always be done when alone and systematically is to prevent acquiring a *habit tic* of opening the jaw.

This special exercize should be repeated at least twenty times or more twice daily.

The special exercize *I* represents the nee-chest position which every physician knows. For retroversion, the proper tecnic is to let air into the vagina after this position is assumed, and then hold the position for 10 or 15 minutes. Then with the thighs closed, roll over on the left or right side, according to circumstances, just before going to sleep. The uterus wil often hold its forward position until the patient rises.

J represents walking on-all-fours. This exercize is probably one of the best exercizes for women with weak abdominal muscles or for relaxt pelvic ligaments. It is also the exercize *par excellence* for a pregnant woman.

This exercize should be taken every night and morning without any clothes on or with only a pair of trunks. The distance may include a hundred steps or more.

This same exercize can be modified by having the hands and feet in a fixt position, as shown in Fig. *J* and lowering the abdomen until it touches the floor and then raising it.

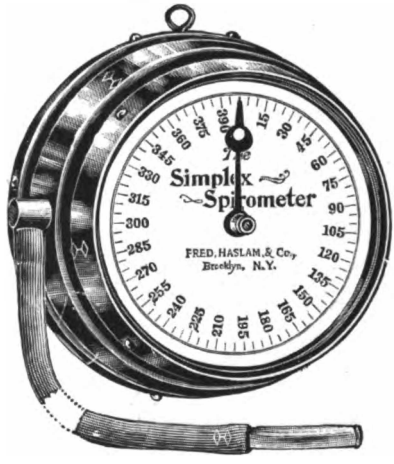


Fig. 196. The Simplex Spirometer. This instrument can be procured form any physicians' supply house. For lung exercizing it is invaluable.

THE SPIROMETER

For testing the capacity of a new patient's lungs, and to watch the progress of their increase, I use a Spirometer. This is illustrated in Fig 196.

I find this a very valuable little instrument. For many patients I prescribe a spirometer to hav in their rooms and watch the development of their lungs. My instructions ar to hang the spirometer on a hook securely fastend to the wall about the height of the shoulders and situated so as not to come in contact with doors or movable furniture.

Thoroly ventilate the room and allow the entrance of all the fresh air possible, wether permitting, in order that the lungs may be ventilated and the exercize invigorating.

Remove all clothing that tends to bind chest, waist or abdomen or keeps them from expanding freely—belts and corsets especially must be laid aside.

Keep the shoulders turnd *backwards* and be careful not to raise the shoulder blades or collar bone, keeping all the muscles flexible.

At each test, hav the hand point to the figure "O" turning it to the right or left by means of the nickeld hub.

Average Lung Capacities

Height	Cubic Inches
5 ft.	180
5 ft. 2 in.	185
5 ft. 4 in.	190
5 ft. 6 in.	195
5 ft. 8 in.	205
5 ft. 10 in.	215
6 ft.	230

EXERCIZES FOR THE PHYSICIAN, FOR HIS PATIENTS, AND FOR EVERYONE WHO WANTS TO CHUM WITH HELTH

If the physician does not know how to gain helth and how to keep it, how can he teach his patients?

As so many physicians ar very ignorant on this most important subject, and as I wanted to giv my readers the *very best* on this "moving subject," I askt the best specialist in *vigor* that I know of to write this lecture.

Fig. 197

I now take plesure in introducing to you (if you ar not alredy one of the thousands who know him), Prof. E. B. Warman of Los Angeles. As this young man is rather backward in putting himself forward (except in running), he presents his back to you at the prattling age of seventy (70) years (Fig. 197). As his pride is in his back, which he can

easily back up, he gave me a small picture of his face and askt to show that later on.*

Preface

After forty-one years of experience and observation regarding Fysical Exercizes, I hav arrived at the following conclusion, viz.: the average person seeking helth, thru exercize, becomes very enthusiastic (for a few days) over any and every "new" system, practises faithfully during the time and then *drops* the whole thing.

Why? Because all extensiv systems (my own not excepted) contain more than the average person has time or inclination to follow daily, unless he is preparing to become a specialist in this particular field.

Therefore, I hav chosen from my own system of Fysical Education (Tensing) the exercizes *I* take invariably, *every morning;* such exercizes as may be taken in twenty *minutes;* such exercizes as wil, with right living, put and keep the human machinery in good running order; such exercizes as may be taken with benefit by the child of six or the child of seventy-six.

These exercizes ar fully illustrated herein and given in the order as I take them every day of the year. *Do thou likewise and years wil be added unto thy life and life unto thy years.*

General Directions

Do not hold the breth during an exercize. Contract the muscle as tho overcoming a natural resistance. When the muscle is brot to its greatest tension, it should be held a moment and then relaxt.

After becoming familiar with the movements, the time required to take all the exercizes wil not excede twenty minutes.

Correct position of the body when standing and sitting, and correct carriage of the body when walking, together

*Most of the exercizes and remarks here given, which ar a prelude to Prof. Warman's special contribution, ar in a small book entitled "Twenty Minute Exercizes," by E. B. Warman, A.M., LL.D., Los Angeles, Cal., publisht by American Sports Publishing Co., 21 Warren Street, New York City, and sold at all Spaulding Sporting Goods Stores in the United States.

with ful, deep breathing and right living, ar essential to HELTH.

The exercizes, to be of the greatest benefit, should become a daily habit. The *minutes* faithfully spent *now* wil reward you in *years* by and by.

START YOUR DAY RIGHT

Do not jump out of bed when awakening. No machine is ever started at ful speed except the human machine (and that breaks the cogs).

Lie flat on the back. Stretch the entire body, tensing and relaxing the muscles of the neck, arms, back, chest, abdomen, and legs. This increases hart action and causes arterial distension in the most natural and effectiv manner.

After arising clense the teeth, rinse the mouth, gargle, drink one or two glasses of cold water, then take the following exercizes in the order given. Take them vigorously but not violently.

Follow the exercizes with a suitable bath or rub down such as is best suited to the patient. Some can react wel to a cold or tepid shower, but one should use great discretion in prescribing baths. *Never take a hot bath in the morning.*

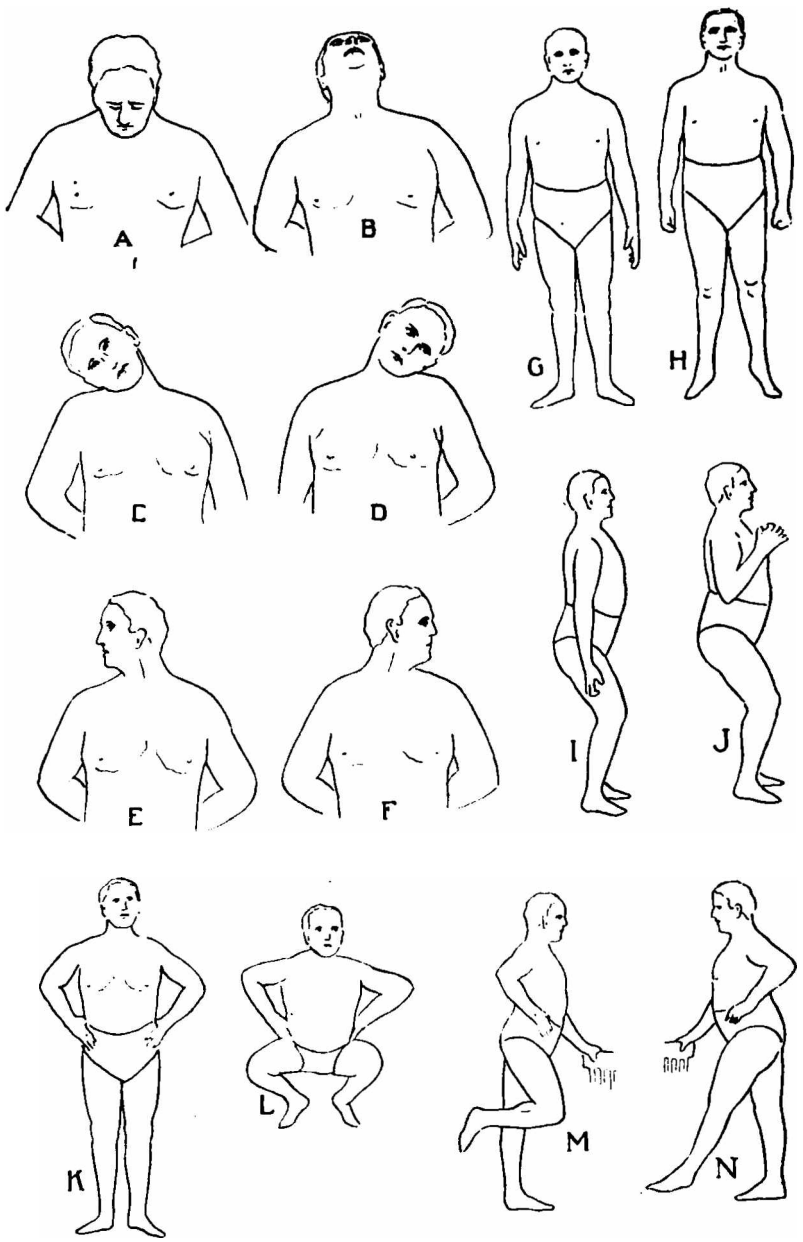


Fig. 198. Illustrating the Warman System of exercizes described on page opposit.

For Neck, Upper Chest and Back

(*See Fig.* 198, *opposit*)

Figs. *A* and *B*. Body erect; hed wel poisd. Move hed forward and down (slowly), pressing chin to chest; then up, back and down. In both cases as far as possible, *and then some*. 15 times each way without stopping.

Figs. *C* and *D*. Body erect; hed wel poisd. Move hed toward right and left side, slowly, without turning the hed. Try to touch ear to shoulder, without raising the shoulder or swaying the body. 10 times each way without stopping.

Figs. *E and F*. Body erect; hed wel poisd. Turn hed to right and left, very slowly, until chin is over shoulder. Do not tip the hed forward or backward when turning. Do not turn the body. 5 times each way without stopping.

For Calf and Forearm

Figs. *G* and *H*. Body erect. Extend fingers to utmost limit with strong tension. Rise on toes, slowly, as high as possible, closing the hands with the strongest tension. Descend slowly to first position, again extending fingers to utmost limit. 50 times.

For the Upper Arms

Figs. *I* and *J*. Body erect. Lower the body by bowing the legs. Tense the arms and half-closed hands. Retain leg position while slowly lifting a very hevy imaginary object with arms only. Contract the biceps to fullest extent; hold a moment, relax, tense the arms again, push down very slowly as against great resistance, thus contracting the triceps to the utmost. Retain leg position thruout. 7 times.

For the Thighs

Figs. *K* and *L*. Body erect. Lower body to deep-nee bend and rise immediately to first position. In descending, allow the heels to rise from floor, and close legs completely, lower thigh resting on upper calf. 25 times.

Figs *M* and *N*. Body erect. Stedy the body by resting the hand on back of chair while lifting the right foot and kicking vigorously. Repeat with the left foot. 50 times each foot.

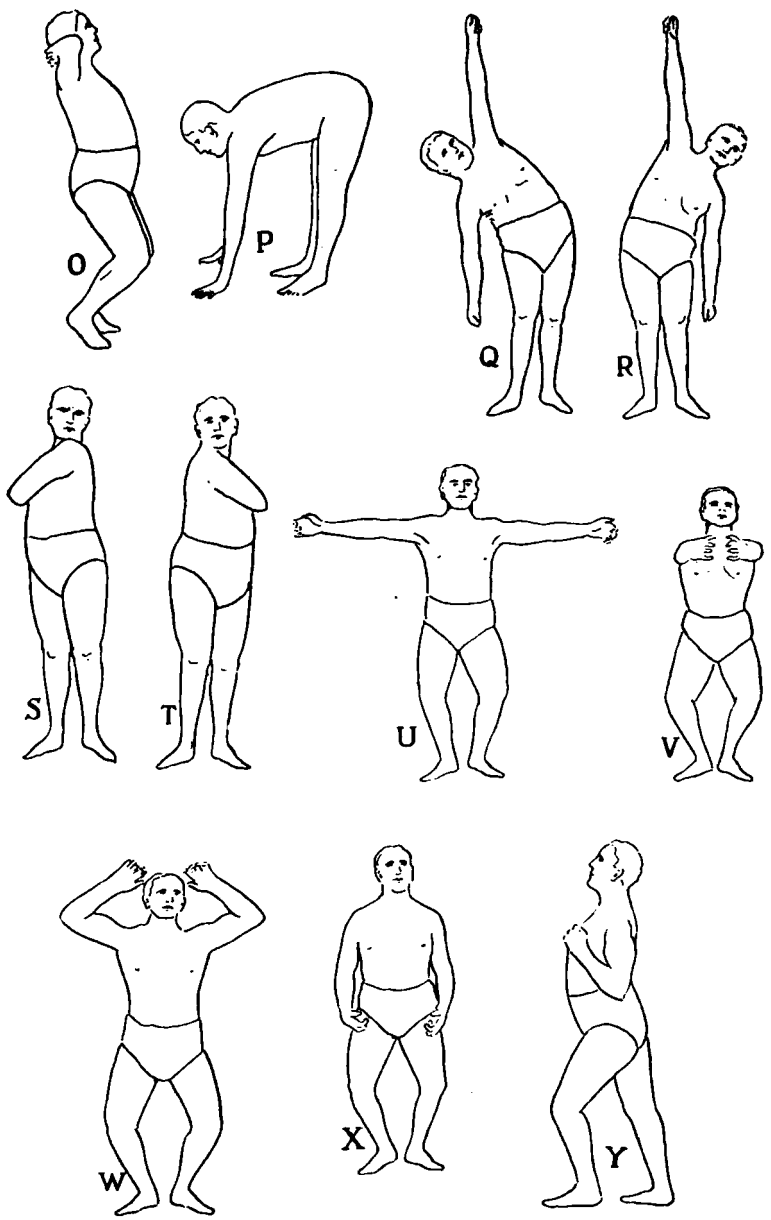


Fig. 199. Illustrating the Warman System of exercizes described on page opposit.

FOR ABDOMEN, SHOULDERS AND BACK

(*See Fig.* 199, *opposit*)

Figs. *O* and *P*. Swing arms up and back to first position, bending backward. *Be sure to bend the nees.*

Swing upward and forward, extending arms abov, front and down, trying to touch the floor with the fingers, nuckles or palms. *Do not bend the nees.* Do not stop until movements ar completed. 50 times.

FOR ABDOMEN, SHOULDERS AND HIPS

Figs. *Q* and *R*. Swing left arm (strongly tenst) out from side and up to highest point; the right arm (strongly tenst) pulling down to lowest point.

Swing right arm up and left hand down in same manner, both arms strongly tenst. 25 times.

THE LIVER SQUEEZER

Figs. *S* and *T*. Twist body to right, keeping face to front, bringing left shoulder under chin, left arm across chest, right arm tense and extended close to body.

Reverse by twisting body to left, face kept front, bringing right shoulder under chin as you cross the chest with right arms; left arm tense and extended close to body. Strike across the chest vigorously, but not violently. Do not move the feet. 15 times.

FOR CHEST, SHOULDERS AND BACK

Figs. *U* and *V*. Body erect. Lower the body by bowing the legs. Extend arms at side on level with shoulders. Tense the arms and half-closed hands. Swing arms front and back, *without lowering*. Keep *strong tension* until completing the exercize. Do not sway the body. 25 times.

Figs. *W* and *X*. Body erect. Lower the body by bowing the legs. Raise the arms at side. Tense them to the utmost when starting them outward and downward *toward,* but not quite *to* the body. Keep arms slightly bent at elbow. Relax the arms when raising them. 25 times.

FOR LEGS, LUNGS, HART AND LIVER

Fig. *Y*. Stationary running. Hands to chest. Advance one foot. Transfer the weight from foot to foot—as in actual running, except advancing. Begin with 100 steps. Increase to 1,000.

HELTH

How to Get It; How to Keep It

By One Who Has It

By E. B. Warman, A.M., LL.D.
Los Angeles, Calif.

One may write never so fluently or talk never so glibly about helth and the advantages to be gaind by following a system of fysical exercizes while he, himself, never indulges in anything more strenuous than that involvd in the mere pushing of his pen.

Every man should take his own medicin, provided it does not come out of a bottle. Where wil you find better medicin for the human body than that containd in fresh air, sunshine, deep breathing, proper bathing, and daily fysical exercizes?

Let us take a retrospectiv view of only a few years and note the evolution of fysical training. At the time of my entering this field—forty-nine years ago—fysical training was largely a system of fysical *straining*. The end or aim seemd to be the making of great muscles regardless of helth. In the process of time the pendulum swung, as it always does in every reform, to the other extreme, and we had a system known as "fysical culture," the end or aim being "grace." It was highly suggestiv of a boneless creature, yet an improvement on the over-production of muscle. Gracefulness is an essential element of ease as opposed to awkwardness, which is an undue expenditure of vital and nervous force. Therefore, so far as it goes, it is desirable, but it does not fil the bil.

Recognizing the fact that there must be a golden mean between these two extremes, I cast about to find that which would meet the exigencies of the hour. After becoming familiar with about every system of exercizes extant, and not finding the ideal, I made bold to formulate one, choosing the best from the various systems and using a little originality on the side. From year to year I pruned the alredy too extensiv system, bringing it down to a thoroly practical basis

and giving the maximum benefit with a minimum expenditure of time and energy.

The next step was to find a name to fit the system not fully coverd by the terms, "Fysical Training, or "Fysical Culture." For this I was obliged to coin that, which of recent years, has become wel nigh universal—*Fysical Education.*

This term is all that it implies. By it I mean the educating of the muscles of the body to hold the bony framework —the anatomical structure—as nature has intended, and as nature demands for *helth.* There is a fysiological law that unless the structure is right the functions cannot be right. Therefore, the correct poise of the body when sitting and standing, and the correct carriage of the body when walking form the very foundation and basic principle of helth, and should precede all helth exercizes, in order that there wil be no friction, no crowding of any organ of the body, no infringement, but that every organ may function on the helth plane.

Keep the back of your neck against your collar. Do not let your backbone get too near your brestbone. Some persons by neglect hav become so stoop-shoulderd that if the hed wer turnd the other way they would be very ful chested. To carry your *hed* high is considerd *fashionable;* to carry your *hart* high is *metaforical;* but to carry your *chest* high is both *desirable* and *helthful.*

Helth! What is it? Helth is wholeness. Therefore it is incorrect to speak of "il helth" or "bad helth," or "poor helth" or "tolerable helth, thank you." There can be no modification of the term *helth.* No fruit can be, strictly speaking, partly whole, but it can be partly decayd. The body cannot be "partly whole" but it can be partly diseasd; hence, not whole.

It is also an error to speak of *"good helth."* All helth is good. Otherwise it is not helth. The word, "good," is superfluous. To speak of "good helth" is to place it in the same category with other erroneous expressions such as "widow lady," "funeral obsequies," "wedding trousseau," and "free gratis."

A good proof of our wholeness lies in the fact that we ar not cognizant of any organ of our body when they ar all functioning properly. If we ar *whole* no "disease" can affect us in consequence of our powers of resistance. We ar "germ" proof. Is that not "a consummation devoutly to be wisht?"

Is it ever attaind? Yes, in many cases. How? By the strict adherence to the laws of helth? Who made those laws? They ar the immutable laws of God as exprest in *nature.* Violate a law of nature, ignorantly or otherwise, and you wil be obliged to pay the penalty in ful. "The laws of nature ar the laws of helth, and he who livs according to these laws is never sick. He who obeys the laws, maintains an equilibrium in all parts, and thus insures true harmony; and harmony is helth, while discord is dis-ease." It has been truly said: "We ar not punisht *for* our fysical sins, but *by* them."

Conforming with those laws means right living. By right living, I mean daily fysical exercizes (as alredy given), fresh air and sunshine, deep breathing, the moderate eating of wholesome and nourishing food, daily bathing, etc. By right living you wil ad years to your life, and life to your years.

Seek the sunshine. A gentleman living in this glorious climate of California had, at the time of the interview to which I refer, reacht the age of one hundred and twenty years, and did not appear over seventy. At last accounts he was stil going. When askt as to his prescription for longevity, he said, "There is no crankiness in my method. It's simply giving the Lord's own medicin a chance to do its work. I can assure you that one hour of bright sunshine, or sunlight pouring down on the bare human body is more beneficial than a whole dispensary of drugs."

The "old" gentleman livd on a ranch and never mist his daily exercize and sun bath. His grandson, eighty years of age (*grandson,* mind you) said that his grandfather could run a mile in six minutes on a sandy road. Here was a man who took his own medicin.

A friend of mine recently past over the Great Divide at the age of one hundred and eighteen years. A week previous to his "passing" he walkt four miles from his home and back again without resting. He, too, had the appearance of a wel-preservd man of seventy (wel *preservd,* not wel *pickled*). Here, also, was a man who took his own medicin.

I could giv you the names of scores of men, and some women, who hav past the hundred-mile post. In every instance they wer men and women who relied upon the beneficial effects of the fresh air, sunshine, moderate eating, etc.

No glutton ever reacht the century mark. I cite these extraordinary cases as incentivs for you to join the race. These ar indeed exceptions; but they show

"How far the gulf-stream of our youth may flow
Into the Arctic region of our lives
Where little else than life itself survives."

There ar just three life-essentials; just three things without which one cannot exist—air, water, food—and their relativ value is in the order named. One may go weeks without food, days without water, but only a few moments without air—oxygen.

Breathing for Helth

By ful, copious breathing (diafragmatic), we oxygenate the blood and oxydize the refuse. For many years I hav advocated exercizes that *compel* deep breathing, rather than the so-cald deep breathing exercizes—a distinction with a decided difference. When taking breathing exercizes (forst respiration), the over-distended air-cels occlude the blood vessels and force the blood back so that the oxygen cannot reach it and the imprisond gas cannot escape—thus causing dizziness which results from forst respiration. The desired end is obtaind only when both air and blood circulate freely in and thru the lungs. This is best accomplisht by some vigorous fysical exercize.

For all-round beneficial results, there is nothing to excel brisk walking—up hil and down dale, *keeping the mouth closed.* Mountaineering makes the largest demand upon the nervous system; rowing, upon the respiratory organs; cycling, upon the circulatory system. Running makes a demand upon all of these, more especially the hart.

("Deep breathing exercizes" for a *sick* person is a different matter. We ar speaking of those who ar wel enuf to exercize.)

Drinking for Helth

Water is the only thing in the world that wil absolutely quench thirst. *Raw water* is an aquarium; *boild* water, a graveyard; *mineral* water, reumatism and premature old age; *filterd* water, a gay deceiver. *Distild* water, especially

when double-distild and aerated, is perfectly free from all mineral and other deleterious matter. The drinking of distild water, regularly, wil postpone the period of "senile decay" anywhere from ten to twenty years.

Drink an abundance of water *according to the needs of* the system. If you perspire freely, supply the waste. A laboring man seldom, if ever, has appendicitis. Why? In the first place, he hasn't time; in the second place, he can't afford it; in the third place, he drinks freely of water and perspires freely, thus eliminating the waste products. Constipation is usually the forerunner of appendicitis. Bile is the natural purgativ of the body. To diminish the amount of water the body needs is to diminish the amount of bile.

Tea and Coffee

Tea is an intellectual drink—a brain stimulant having *no reaction* when properly brewd. Theine, the most essential element, is almost as quickly soluble in hot water as is sugar. To prolong the brewing beyond three minutes has a deleterious effect on the human system.

Coffee—the blessed beverage—"the cup that cheers but does not inebriate"—is a "nectar for the gods." It can be, and *has* been scientifically proved that coffee, when properly made by percolator or French drip, is a *non-reactiv* stimulant. It should be taken without trimmings. The cream in the coffee works a hardship on both stomac and liver. The activ principle is caffeine (over which a great hullabaloo has been made) which, when drank in *moderation,* is not a nerv *destroyer* but a nerv *restorer.*

But tea, overdrawn, and coffee boild ar poisons.

Tea and coffee *drinkers* ar not, necessarily, tea and coffee *drunkards.*

Eating for Helth

There ar those who *under*eat, but they ar in the minority. *Over*eating is undoubtedly the cause of many, if not all of the ils of suffering humanity. To say, "All the ils which flesh is heir to," is an erroneous statement. Flesh is not *heir* to *any* ils. Helth is *ours* by *divine heritage.*

Foods ar divided into classes. The *proteids* ar the *flesh-formers*; the *carbohydrates* (starches and sweets) ar the *work-foods;* the *fats* ar the *heat-foods.* These should be properly proportiond according to one's needs. But abov

all else, the selection of food should be such as to contain the various mineral salts of which the human body is composed. These, to be fully assimilable, must be in their naturally organized state, as found in grains, fruit, vegetables, etc.

Normally, one can take care of anything wholesome, if there is not an overproduction or a wrong combination. Of these you can familiarize yourself by the study of food values. But you would be better off without this knowledge, if it leads you to become self-centerd, and causes you to analyze every mouthful of food you eat. Some food cranks and food faddists know so much about diet, and ar so enslaved that they ar ever il at ease when invited out to take "a square meal" lest they break from their usual routine.

When *eating for helth,* ever bear in mind that no one can hav helth who habitually eats too much, or eats too often, or eats too many kinds of food at the same meal, or eats when hurried, anxious, or excited; or when rising late, gulps down a harty breakfast and sprints for the car; or lunches at a "minute-lunch-counter" to "save time."

When to Eat

Man is the only animal that wil eat when il. Man is the only animal that eats by the clock. You should eat when hungry, provided it is *true hunger*—not mere appetite. A hungry man is never a "kicker." He wil eat of whatsoever is set before him, asking "no questions for conscience sake." Two meals a day should suffice for the average man or woman—a very light breakfast and a harty six o'clock dinner. After years of experimenting, I find this plan preferable, for mine and me, to the "no-breakfast" theory.

Do *not* eat when *tired*—tired in brain or body; but insted, relax, let go, if only for fifteen minutes—better fifteen *minutes now* than fifteen *weeks* or *months* later on.

Do not eat when you hav a grouch. Throw it in the waste basket before leaving the offis—the janitor wil take care of it. Or if you ar so unfortunate as to take it home with you, giv it to the dog and then shoot the dog.

How to Eat

Thoroly masticate every mouthful—not to the extreme, as in "Fletcherizing;" nor counting the number of chews (no

mental arithmetic at the table), but "get the habit" of near liquefying all food. The mouth has work to do which the stomac cannot do.

Be cheerful when at the table. A sour contenance may cause a sour stomac.

Whatever you eat, do not fear it. If you fear it, do not eat it, but if you eat it, do not fear it. Don't wonder if what you hav eaten wil agree with you. It wil not if you wonder. Say goodby to it, never expecting to hear from it again.

What to Eat

I would first draw the line on that which is not nutritious. Do not tickle the palate at expense of the stomac. Whether your food comes from the animal or the vegetable kingdom, one rule holds good—there should be a proportionate amount of the proteids, carbohydrates and fats, together with the necessary organic salts.

Some persons ar satisfied in the matter of eating if they only "get ful"—no matter with what. You should choose *quality* rather than quantity. If you eat sixteen ounces of beans you get twelv ounces of nourishment. To receive the same amount of nourishment from cabbage, you would be obliged to eat fifteen pounds. However, as to the mineral salts (vitamins), the cabbage contains four times as much as do the beans.

Do not eat unpalatable food "because it is good for you." It is *not* good for you if *unpalatable,* as the gastric juice wil not flow for food you do not relish.

It is said, and believd by many, that vegetarians ar calm, mild and peaceful; that flesh eaters ar inclined to brutality and hav greater animal propensities. Proof of this is wanting.

It is not so much the kind of food which goes into the human being as the kind of human being into which the food goes.

Whatever else you do as regards helth, it is of the utmost importance that you keep the four eliminating agents of the body—lungs kidneys, skin, and bowels—normally activ, that is, without resorting to drastic remedies.

Bathing for Helth

To hav helth—a system wel toned, a clear complexion—you should take some kind of a bath not fewer than three hundred and sixty-five times a year.

The *kind* of bath depends on fysical condition, one's environment, and actual needs of the body. I would recommend a *cold* water tub bath for those who have "vitality plus"—vitality enuf for immediate and helthful reaction.

To take a *hot* bath, other than as a remedial agent, is more harmful than helpful—a nervous leakage; whereas a *warm* bath, or a *tepid* bath acts as a sedativ and *cannot be too highly recommended.*

Color of Clothing for Helth

The salutary influence of solar heat and solar light, especially the latter, ar not sufficiently wel-known to hav their therapeutic value appreciated. As a rule, avoid black clothing when exposed to the rays of the sun. *Black absorbs the light* of the sun but *transmits the heat.*

White or light-colord clothing *transmits the light* of the sun and *reflects the heat.*

It is the *light* of the sun that the human body needs. The relativ effect of the various colors of clothing produced upon the human body when exposed to the sun is as follows:

White 100° F., pale straw 102°, dark yellow 140°, light green 155°, dark green 165°, turkey red 168°, light blue 198°, black 208°. It wil be seen that *white* produces the *least* percentage of *heat* and *black* the *largest.*

The Span of Life

The natural term of man's life, arguing from the logic and evidence of comparativ zoology, is one hundred and forty years. The animals in their natural state live to an age equivalent to five times their period of growth. In this respect man should be no exception. Scientists, as a rule, agree that man's growth is not attaind until his twenty-eighth year. Hence, applying the principle to man givs him five times twenty-eight, or one hundred and forty years to sojourn here—better say, one hundred and forty *and then some.* It is not wise to place a limit on life.

As one who takes his own medicin; as one who lives up to the principles advocated, I hav no hesitancy in saying that I think I hav a lease on life for one hundred and forty years, with the privilege of extending the lease if I desire.

Conclusion

Just a word in conclusion—a word to enthuse some fellow-traveler along the way. If you want to go bounding past the hundred-mile post with a hop, skip and a jump, you should never talk of "growing old" for in so doing you ar sowing age-producing seeds in your subjectiv mind, in consequence of which you wil reap old age conditions in every part of your body. Insted of saying, "the older I grow," say "the longer I liv." You'll liv longer if you do.

This is the picture I would present to you: From sixty-five to seventy we ar on the last stretch of Youth. At seventy we enter the vestibule of Middle Life, there to remain until ninety-five, at which time we enter the vestibule of "Old Age" (so-cald). At one hundred, we enter the "old-age" room there to remain as long as we like. We should begin the *second* century stronger than we began the *first*. The *soul* of man does not *age* with the years.

Every day I make the following affirmation:—Helth and Strength; Helth and Strength to every part of my body; that every organ of my body shal function on the helth plane. Age, with its infirmities, cannot touch me; youth cannot leave me; the *spirit* of youth shal ever abide with me.

With Victor Hugo I can say: "The snows of winter ar on my hed, but eternal spring is in my hart. When I go down to the grave, I can say, like many others, I hav finisht my day's work but I cannot say, I hav finisht my life. My day's work wil begin again the next morning. The tomb is not a blind alley; it is a thorofare. It closes on the twilight; it opens on the dawn."

Vigorously Yours,
Edward B. Warman.

HEAT, COLD, HYDROTHERAPY, AND BATHS

Heat

Heat used therapeutically is either *radiant* or *convectiv* —light heat or dark heat. The one is a rate and mode of motion occurring in luminiferous ether. The other is heat conveyd thru some non-luminous substance. Radiant heat shines. Convectiv heat is an interchange of temperatures, and is dissipated when the surrounding objects ar of equal temperature. Light or radiant heat is far more penetrating than dark or convectiv heat. Besides, with light or radiant heat we get the value of the light. Dark heat rays can hardly pass thru glass. *Dark heat* applied in compresses and fomentations and hot water bags, etc., heat only the surface. It dilates the capillaries and reduces congestion. Light heat raises the temperature of the body, relieves stasis, and augments elimination. It rectifies faulty metabolism.

Cold

Cold can be used therapeutically, but to a limited extent. The general effect of cold is depressing. It contracts the capillaries and thus aggravates congestion. Cold can be used only on patients who react wel. If ever in doubt as to which to use, whether Heat or Cold, use Heat. Cold applications for a brief period stimulate circulation in some persons, but in others any cold application is depressing. *Use Heat more, use Cold less.*

Hydrotherapy

Hydrotherapy covers a large field. By grasping the different effects of heat and cold, and realizing that many patients cannot endure cold water, we ar on the right track to use Hydrotherapy. Most offises ar not equipt for using water baths. For home use, the needle-spray shower, such as can be attacht to any bath tub, is to be recommended. Shower baths within cloth curtains ar not agreeable to the majority. A hot shower or tub bath followd by a cold needle-spray-shower bath, is good for some neurotic conditions; but many physicians hav had their patients go to some other doctor, because they recommended cold baths. Cold baths, if tolerated at all, should be taken in the morning as soon

as one rises. Hot baths, if not too prolongd, ar sedativ at night and with some aid in producing sleep. Any baths for therapeutic effects should be immediately discontinued if they make the patient worse.

Baths

Baths for therapeutic purposes ar of various kinds, but the *electric light bath* seems to be most perfect. The physician can hav an electric bath cabinet as one of his aids, and the application is easy, practical and beneficial. We get the effects of the light as wel as of the heat. There is as much difference between the "light bath" and the "dark bath" as between the light heat and dark heat. The light bath is penetrating. It dilates the capillaries, reduces congestion, stimulates the hart, quickens elimination. Besides this, the light penetrates every cel in the body.

Summary

Altho these four modalities ar of great therapeutic value, yet in this work I shal not say very much about them under this special hed. Much is said regarding radiant *heat* in the lecture on Radiant Light and Its Therapeutics.

From my standpoint *cold* has not very much of a place in therapeutics.

Hydrotherapy covers such a large field that only just a few words can be said about it in such a work as this. Besides hydrotherapy is not practical for the ordinary offis specialist. It is suitable only for sanitaria.

Under the hed of Exercizes, and especially under the hed of Exercizes for the Physician, etc., is mentiond some practical points regarding *baths*. The electric light bath I think is the best of all baths, and that is mentiond in the lecture on Electric Light Baths.

PRACTICAL TREATIS ON MEDICAL MASSAGE

Many do not use the powerful incandescent lamp radiations in connection with massage, but from my experience in both methods of massage, I am sure that radiations from the powerful incandescent lamp aid greatly in relaxing the tissues and thereby enhancing the beneficial effects of massage.

METHOD OF APPLICATION

According to the reports of many fysical therapeutists who ar using soluble stainless iodin in conjunction with massage, it seems as tho radiations from the powerful incandescent lamp ar a great adjunct in this work.

The soluble iodin, preferably *Iodex,* is to be applied to the diseased parts, which should be gently rubd or massaged until the color entirely disappears.

While the massaging is being done, or for a few minutes before, radiations from the 2,000-candle-power or 3,000-candle-power lamp ar allowd to fall on the parts that ar anointed with the soluble iodin preparation. This greatly enhances absorption and is doubtless superior to hot fomentations or baking. The radiations from the 2,000 or 3,000-candle-power incandescent lamp not only aid in the absorption of the soluble iodin but relieve pressure within the tissues and thereby greatly aid recovery.

As I hav had so much success with massage in conjunction with the 3,000-candle-power incandescent lamp and soluble iodin (especially Ung. Iodi, M & J), I wanted my readers to know about it.

In order that I might hav the very latest and best authority on the subject, I requested the editor of the Pharmacal Advance to giv me a concise and practical treatis on medical massage, especially in connection with soluble iodin.

Inasmuch as massage is little by little getting away from the medical profession, where it really belongs, I know my readers wil be pleasd to hav this subject presented in the following concise and practical manner.

History of Massage

History informs us that massage has been practist from the most ancient times amongst savage and civilized nations, in some form of rubbing, neading, anointing, percussion. passiv or mixt movements. From the days of Homer down to the present time, we find eminent physicians, filosofers, poets and historians, who record their appreciation of massage.

Definition of Massage

The word massage means—neading, manipulating, rolling, and percussion of the external tissues in a variety of ways, either with a curativ, palliativ or hygienic object in view, and it is the scientific manual application of certain movements adapted to diseasd conditions of the human body.

Mode of Procedure

Among those familiar with massage, opinions differ somewhat as to the exact mode and manner of procedure which should be followd by a good masseur. Some ar of the opinion that the skin should be first pincht, and that the deep parts should be reacht subsequently, that the action should be rapid, jerky and quick. The writer, who for many years past has been an activ practitioner of massage, is entirely opposed to this mode of procedure. If, for instance, a painful joint is to be delt with, it should first be extended, after which the joint should be firmly and stedily manipulated.

If the abdomen is to be massaged, the thighs should be partly flext, and deep but very carefully graduated pressure should be maintaind thruout the entire operation. After the deep parts hav been so manipulated, then the superficial structures should be firmly gript and squeezd, and even neaded and pincht (See Fig. 200).

Procedures in Massage

(See Fig. 200.) All the various useful procedures in massage may be classified under three heds, as follows: 1. Effleurage; 2, Petrissage; 3. Tapotement.

Under each of these heds we hav several subdivisions, which wil be separately treated in their proper order.

First Procedure: Effleurage

All stroking movements used or applied in performing massage come under this heding.

Effleurage is subdivisible into two important parts, namely: Stroking and Friction.

Stroking: The first subduple of effleurage, is usually indicated in conditions of pronounst inflammation, indigestion, constipation, etc.

Procedure: Passiv stroking is given in the direction of the arterial blood current, downward or outward from the hart, and should never be given to and fro, but in one direction only. It may be given with the palms of one or both hands or with the cushions of the fingers or thums.

Effect: 1. The superficial circulation is improved. 2. Cutaneous nervs ar soothd by light stroking. 3. Firm stroking causes dilation of the superficial vessels, so raising the local temperature. 4. Passiv stroking increases glandular activity.

Friction, the second subduple of effleurage is usually indicated in sprains, dislocations, fractures, inflamed joints, etc.

Procedure: Friction is given in the direction of the venous blood current. It may be given with the heel of the hand, thum or the fingers. To giv friction properly, make small successiv circles over the part requiring treatment without moving the skin. When the part is not painful considerable pressure may be exerted.

Effect: If friction is applied to the parts above an inflamed condition it wil relax congestion by drawing or forcing the blood away from the diseasd area. Thus absorption is enhanst and inflammation reduced.

Second Procedure: Petrissage

All pressure movements used or applied in performing massage come under this hedding.

PETRISSAGE, is subdivisible into two important parts, namely: SUPERFICIAL NEADING and MANIPULATIV NEADING.

SUPERFICIAL NEADING, the first subduple of petrissage is usually indicated in conditions of stifness, pregnancy, reumatic gout, hemorroids, neuritis, etc.

Procedure: Superficial neading is given from abov downward in the direction of the arterial blood current and in one direction only. It may be given by grasping a group of muscles between the fingers and thums of both hands, the thums on one side and the fingers on the other. The thums ar held stedy so that the muscular mass in hand can be workt back against them with the fingers.

Effects: 1. Nervs and muscles ar stimulated. 2. Lymfatic and venous circulations ar accelerated. 3. A larger supply of arterial blood is brot to the parts massaged. 4. Glandular activity is promoted. 5. Elimination and absorption ar increast. 6. Effusions and swellings ar reduced. 7. Tissue growth is stimulated.

MANIPULATIV NEADING, is the second subduple of petrissage and is usually indicated in conditions of paralysis, locomotor ataxia, anemia, obesity, reumatism, sciatica, reumatoid arthritis, muscular reumatism, etc.

Procedure: Manipulativ neading, like superficial neading, is given in the direction of the arterial blood current. It may be given by grasping the muscles in the hand between the fingers and the heel of the hand, and by the assistance of the ball of the thum, the muscles in hand ar to be squeezd, rold or neaded by the entire heel of the hand against the fingers. Especial care should be exercized in not allowing the hand to move on the skin.

Effect: 1. Development of the muscles is promoted. 2. Adhesions ar broken down. 3. The absorption is enhanst. 4. Venous congestion is relievd. 5. Thickening and shortening of the muscles ar prevented.

THIRD PROCEDURE: TAPOTEMENT

All percussiv movements used or applied in performing massage come under this hedding.

TAPOTEMENT is subdivisible into two important parts, namely: PERCUSSION and VIBRATION.

PERCUSSION, the first subduple of tapotement is indicated in all forms of muscular weakness and atrofy, and wherever stimulating effects ar desired.

Procedure: Percussion is given with the ulnar edge of the hand, the palm of the hand, the tips of the fingers or the closed hand, and is known according to the method employd, as ulnar, palmar, digital or fistic percussion. It is usually administerd by the two hands which ar used in alternation. The movement should be from the rist joint so as to giv the blow the required quality of elasticity.

Suggestions: Ulnar percussion is usually applied to the back. Simultaneous palmar percussion is usually applied to the extremities. Fistic percussion is usually applied to the thighs,—to the gluteal muscles. Digital percussion is usually applied to the hed.

Effect: 1. Nerv centres ar stimulated. 2. Strong and prolongd percussion causes a benuming effect upon the part being massaged. 3. Moderate percussion causes contraction of the blood vessels while prolongd percussion dilates them. 4. Moderate percussion increases the irritability of the nervs while prolongd percussion temporarily paralyzes them.

VIBRATION: The second subduple of tapotement is performd by the aid of mecanical vibratory machines. We wil not therefore take up this modality for the present, rather confine ourselves to the manual.

MEDICAL MASSAGE

While the various forms of curativ massage hav been firmly gaining in favor with the medical profession and the general public for many years past, it is a fact that medical massage has not been very much practist until recently. The reason for this seems to be that effectiv remedial agents without objectionable features wer heretofore unknown.

IODIC MASSAGE

For the past four years, however, iodic massage has become very popular with many physicians, owing to an available form of iodin without any of its inherent drawbacks.

The Remedial Agent "Iodex" (Ung. Iodi M. & J.) is an ideal iodin preparation for external application which is free from all irritating, corrosiv and staining tendency. It is an efficient and a powerful absorbent. *Iodex,* which is a scientific product and which represents the zenith of farmaceutical achievements, solvs the whole difficulty of effectiv medical massage and opens an avenue to a new method of procedure to physicians in the treatment of cases hitherto intolerant.

Method of Application: Iodex is to be applied to the diseasd parts which should be gently rubd or massaged until the color entirely disappears. In some conditions—which wil at once suggest themselvs to the medical mind—hot fomentations ar of assistance to enhance absorption, in others cataforesis or baking. Probably the latest and best tecnic is to supply radiations from a powerful incandescent lamp, or a smaller lamp, if necessary.

Effect: The chief caracteristic feature of iodic massage is the relief which it affords pain: its analgesic and soothing influence enable the practitioner to gently massage a sore joint without producing pain.

Procedure: The method of procedure is to apply Iodex abundantly to the diseasd parts and rub it in thoroly with a gentle stroking movement: after the color has all disappeard superficial and manipulativ neading massage should be administerd. After the pain in the diseasd parts is lessend to such an extent that the patient can endure it, percussiv massage should be applied as rapidly as possible, and continued for from 5 to 20 minutes.

Sciatica: Severe attacks of sciatica wil redily yield to the influence of iodic massage and powerful, radiant light.

Locomotor Ataxia wil be greatly benefited by a course of iodic massage, a markt improvement in the tone of the muscles wil be observd after even the first treatment. If iodic massage is frequently given the patient, improvement wil also manifest itself in the disturbances of sensibility, paresthesia, and anesthesia wil disappear.

Lumbago: As in other reumatic soreness, iodic massage wil afford to the physician a method of relief for his patient. The application of manipulativ neading in cases of this kind results in the disappearance of all soreness and relaxation of the crampt muscles.

Reumatoid Arthritis, reumatic gout, or when arthritis deformans assumes a cronic form after an acute attack, and when the disease has affected every joint and apparently has run its course, and seemingly done its worst, rapid improvement with permanent amelioration of symptoms wil be secured by the application of iodic massage. Even when there is eburnation of the articular surface and rattling of the bones, with distortions of the joints, iodic massage wil giv results far beyond the expectations of any physician.

Iodic Massage is indicated in reumatism, myositis, elefantiasis, muscular rupture, edema. The symptoms of diseases such as these usually occurring in reumatics and in those who suffer more or less from reumatism, occasiond perhaps by excessiv fatigue, sudden or violent strain, injury or colds, invariably abate and quickly disappear in a very satisfactory manner under treatment with iodic massage.

Procedure: The method of procedure in diseases of this kind is to apply Iodex generously to the diseasd parts and rub it in with a gentle stroking movement til all color has disappeard, then massage with a deep manipulating neading movement over the affected group of muscles. Percussiv massage, together with vibration, may be applied firmly over muscular masses where there is a condition of myositis, muscular rupture or elefantiasis.

Sprains and severe inflammatory conditions in general wil redily yield to iodic massage; the pain and swelling wil abate under its influence.

Synovitis: The use of cold applications in sprains or synovitis ar not without danger for the reason that they may cause gangrene. Aside from this, by the suspension of nutritiv action, which they sometimes cause, the process of repair may be retarded.

Procedure: The method of procedure in troubles of this kind is to apply Iodex liberally to the diseasd parts and rub it in with a gentle stroking movement til all color disappears, then massage with rotary friction, superficial and manipulativ neading.

Use powerful radiations of light from an incandescent lamp, or some other lamp, whenever it is possible in connection with iodic massage.

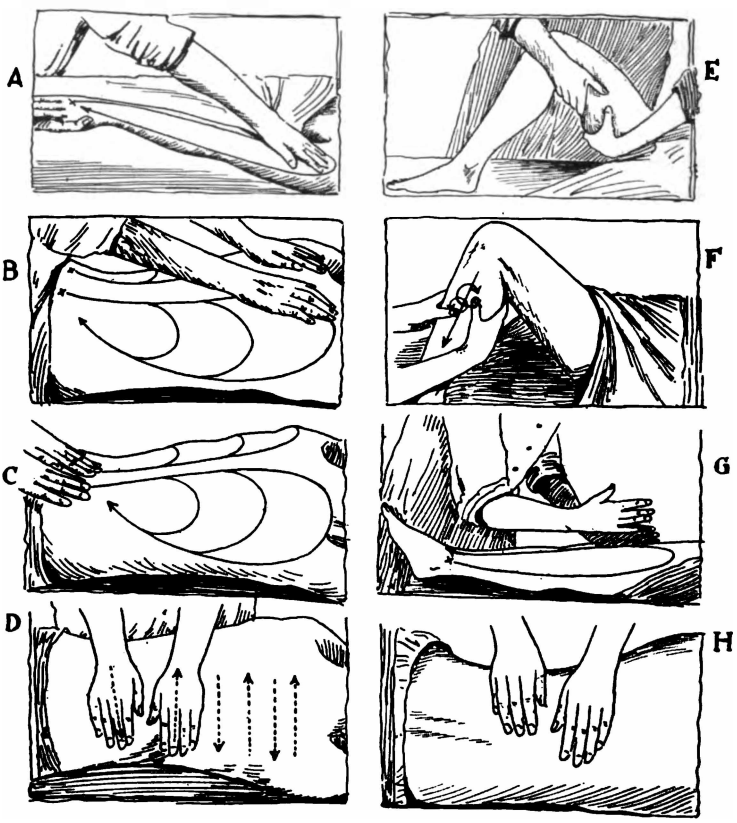


Fig. 200. Massage Tecnic

A, B, C, and D, represent efileurage; A, B, and C, represent stroking while D, represents friction.

E, and F, represent petrissage; E, representing deep or manipulativ neading where the movements should procede toward the *center* of the body; and F, representing thum or superficial neading, which should advance toward the *extremities* of the body.

G, and H, represent tapotement; G, representing hacking or percussion given with the ulnar edge of the hand; H, representing palmar slapping or clapping of the back. Notis that the fingers ar closed in such a manner as to form an air cushion between the hand and the body. This clapping of the hands should be done first with one hand and then with the other.

VIBRATO-MASSAGE

Nearly all fysical therapeutists ar familiar with various kinds of tissue oscillators or, as some call them, "body shakers." Many of them ar very crude while some ar very complicated.

I hav had some experience in devizing apparatus for mecanical massage or body oscillation. I hav devized special mecanical apparatus for vibrating the feet, as I found it of great benefit in treating conditions of cold feet, num feet, tickling and burning feet, etc. For tired feet, probably oscillation is the quickest and best remedy.

Fig. 201 illustrates the "Vibrato-Masseur" manufactured by the Vibrato-Masseur Co., Minneapolis, Minn. The cabinet is 42" high, occupies floor space 18" x 30"; and a similar space in front is required for the one using it. The wood work can be made to match offis fixtures. All mecanical parts ar in one unit fastend on an iron bed plate and containd in a hard wood case mounted on four-leg standards. The movable metal parts and trimmings ar hevily nickeld. The other parts ar enameld. Motor is furnisht for D.C or A.C. Electric connection can be made to an ordinary electric-light fixture so apparatus can be placed in any desired location. The stroke regulation is affected by turning the "key" on the top near the front edge. *A* represents the extension for foot vibration. *B* represents the terminals to which the various applicators can be attacht.

Fig. 201 shows the "Vibrato-Masseur." This apparatus imprest me the first time I saw it but it lackt an attachment for foot vibration. I immediately took it up with the manufacturers and askt for an attachment for vibrating the feet. They hav complied and the attachment is shown in Fig. 201, A.

Tissue Oscillation

Tissue oscillation is always indicated where massage and vibration effects ar desired—in ailments directly traceable to lack of blood supply due to poor and unequal circulation; to dispel congestion; stimulate activity; assist in correction of improper functioning of parts and organs; strengthen muscles; break up adhesions; relax tension of muscular structure; bild up weak and undevelopt parts; etc.

No less prominent and successful is the feature of passiv exercizes for convalescents, injured and deformd people, and those who do not take the activ personal methods which provide a means for systematic body treatments for general tonic effects.

No passiv exercize is more convenient or practical and so far-reaching.

Fig. 202. Showing the Vibrato-Masseur in use. Many styles of belts and applicators can be used to suit the patient's requirements. The harder the patient pushes the deeper is the effect.

One of the special features of tissue massage is the treatment of obesity or the reduction of fat. It does away with the tedious personal efforts of hand massage methods.

Some of the special features of the Vibrato-Masseur here illustrated is that the stroke can be varied thru a latitude of ¼ to 2 inches during operation.

It produces the effect of vibration, massage, oscillation, and passiv exercize all at one time.

The motor is large, thus insuring ample power and dependable servis; is slow running, which permits the flesh to follow the movements.

The machine action is indirectly communicated to the body thru the medium of a belt used as an applicator, Fig. 202. The use of belts allows introduction of distinctiv kinds

for different purposes. The belts ar flexible and movable and conform to the person, and ar adjustable to any part.

Depth and nature of treatment is establisht by selection of the appropriate applicator, amount of pressure exerted against it, proper adjustment to part, suitable stroke regulation, and time used. The action is confined solely to the patient—the machine does it all.

The selection of applicators is very complete, including corrugated stitcht belts, soft applicator of stout web material for treatment of delicate structures and especially for using over parts where there is not much flesh as wel as over lame and sore parts; also roller applicators composed of a series of rollers or spools arranged in belt form for use in the reducing of obesity and for hardening of muscles.

The Use of the Vibrator in Vibrato-Massage

A good, strong vibrator can be used for doing vibrato-massage. As there ar so many different kinds of vibrators on the market, it would be useless for me to try to explain them or go into their different points of excellence. Many of the electrical devices hav a vibrating attachment with them.

Fig. 203 is the style of vibrator that I use. I hav found it a very strong and dependable outfit. Mine is attacht to a cabinet rather than a pedestal so that all the different attachments can be kept in the drawers and no more floor space occupied than with the pedestal.

A small, weak vibrator is not of much use for vibrato-massage.

Fig. 203. The Victor Vibrator, manufactured by The Victor Electric Corporation, Chicago, Ill. This vibrator I hav used for years and hav found it very dependable. It can be used for Vibrato-Massage as wel as for regular vibration treatments.

A NEW FOLDING TREATMENT TABLE

Figs. 204, 205 and 206 show a new folding treatment table made for me by a Los Angeles cabinet maker. Notis that the braces ar of steel and so made that they wil stand great strain and weight. The wood is quarterd oak of natural finish and the top is coverd with lether or imitation lether. From the illustrations any good cabinet maker could duplicate it, but would hav to hav the steel braces made up by a blacksmith. Fig. 205 shows how they fold up. The height of the table is 29¾", the width is 22½", and the

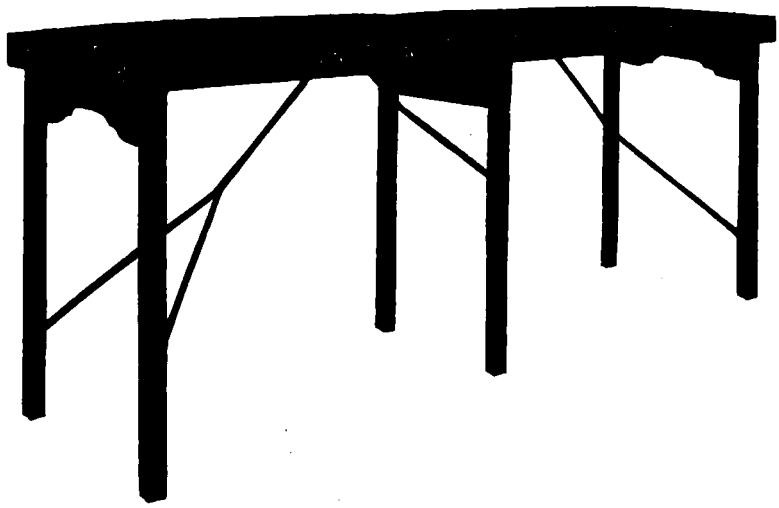


Fig. 204. A new folding, treatment table made by a Los Angeles cabinet maker for the author. It is very strong and convenient for all forms of fysical therapy.

length of each section is 36", making the table six feet long over all. If a light-weight table of this style should be desired, so it could be easily carried to the patient's house, the wood could be of pine, whitewood, or some other soft, light wood.

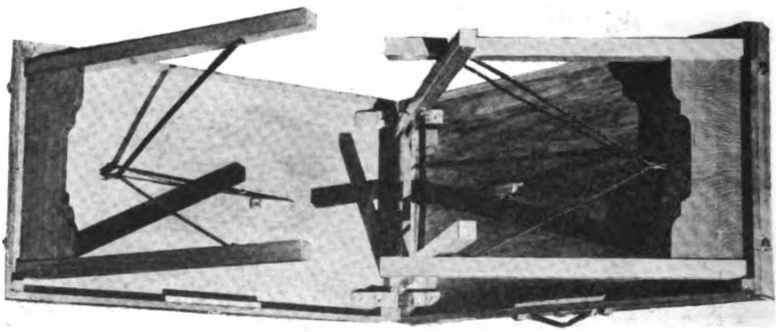


Fig. 205. Table shown in Fig. 204 partly folded up.

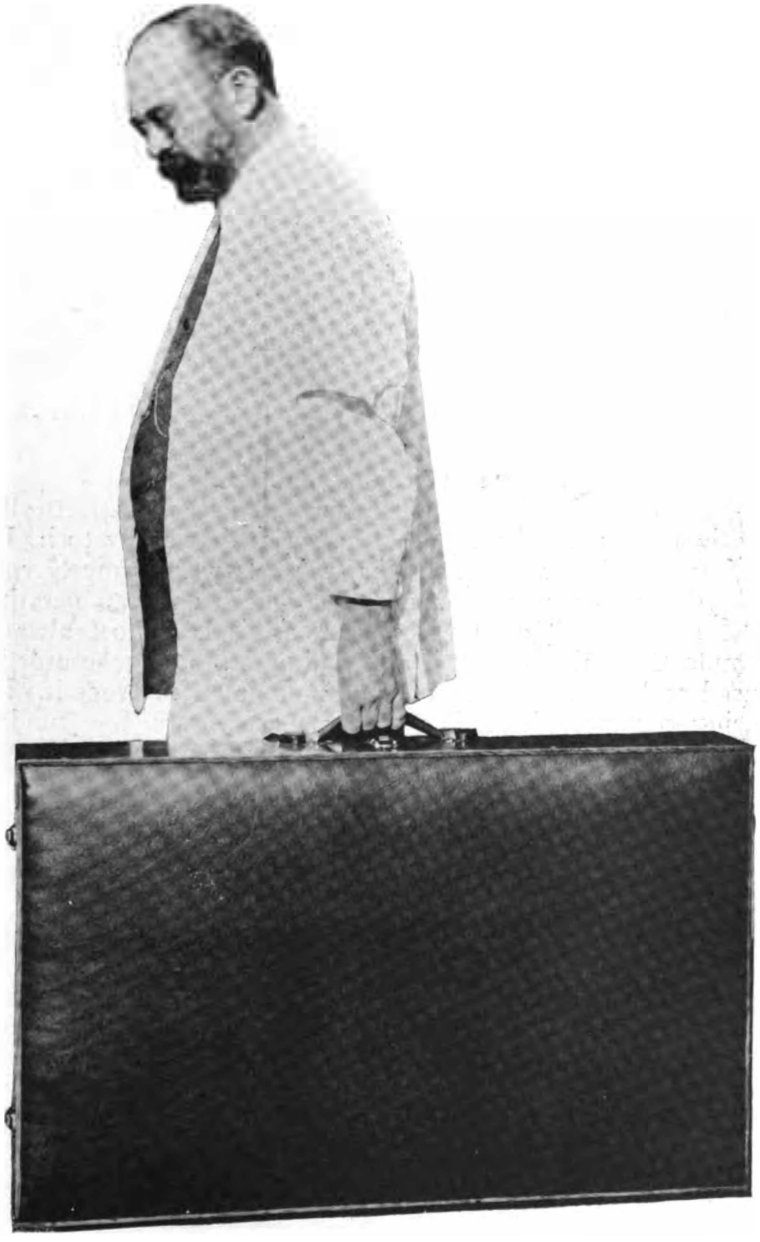


Fig. 206. The folding table shown in Figs. 204 and 205 closed up like a dress-suit case and redy for carrying. Such a table is very convenient to hav in one's offis, as it can be put away and used when "a rush" comes.

ELECTROTHERAPY

Four forms of electricity ar used therapeutically:

(1) The Galvanic, constant, or continuous current.

(2) The Faradic, induced, induction, or interrupted current.

(3) Static, frictional, tension, or Franklinic electricity.

(4) High frequency, or oscillating electricity.

No one should attempt to use electricity therapeutically without first lerning some of the fysics that apply to it. In using the *Galvanic* current, battery cels wer formerly employd, and ar now by many; but where one can get the "street current" as a direct current, it is almost always employd. If the current is alternating, a motor generator is used and the direct or constant current taken from it. In using constant, direct, or galvanic current, a few fundamental points regarding the properties of the two poles must be borne in mind.

If the two poles ar put into water, oxygen gathers at the positiv pole and hydrogen at the negativ pole. From this we see that the positiv pole is acid-producing and the negativ pole is alkalin-producing.

The *positiv pole* is hemostatic, sedativ and vaso-constrictor, while the *negativ pole* is the opposit. The *positiv pole* hardens tissue, while the *negativ pole* softens tissue. The *positiv pole* produces an acid caustic and a hard unyielding cicatrix, while the *negativ pole* produces an alkalin caustic and a soft, yielding cicatrix. The *positiv pole* wil harden and aggravate a stricture while the *negativ pole* wil soften and dilate a stricture.

Never use the galvanic or direct current without passing it thru a milliamperemeter. Know how much current you require for the treatment and *be sure to watch the meter.* We ar all supposed to know Ohm's law, "The strength of the current passing thru any part of a circuit varies directly

as the difference of potential between its elements and inversely as the resistance of the circuit itself." In other words, if C equals the current in amperes and E represents the electro-motiv force, or voltage, and R the ohms of resistance in the circuit, we would hav as a formula, $C=\frac{E}{R}$

With the direct or constant current we produce electrolysis or the breaking up of a substance into its ions. The removal of hairs, warts, moles, etc., is accomplisht by electrolysis.

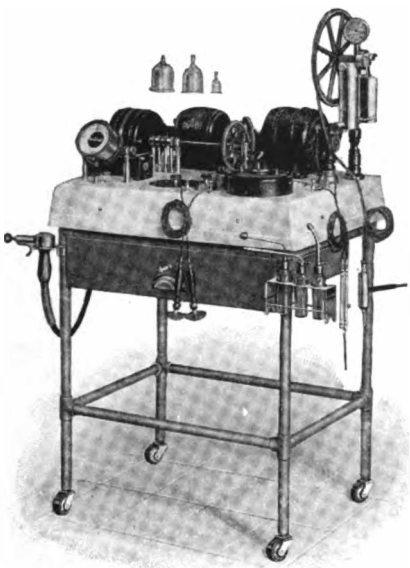


Fig. 207. McIntosh Universalmode, manufactured by McIntosh Battery & Optical Co., Chicago.

Cataforesis is an electrolytic process whereby the ions ar carried into the tissues. This is a most important branch in Electrical Therapeutics.

Fig. 207 illustrates the McIntosh Universalmode. This is one of the electrical outfits that I use and can recommend very highly.

Fig. 208 illustrates the modalities of the Universalmode.

Fig. 209 shows the No. 4 McIntosh Polysine Generator. This is also a most excellent electrical outfit.

Fig. 210 illustrates the modalities obtaind from this Polysine Generator.

There ar many other electrical outfits and wall plates on the market but as so many of them ar useless, I would

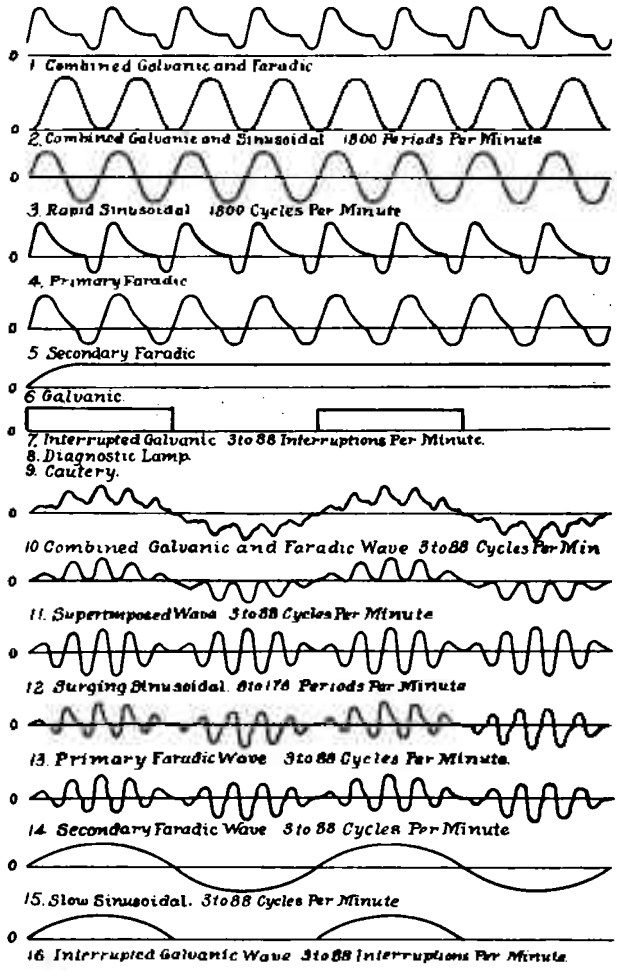


Fig. 208. Modalities of the Universalmode.

caution every buyer of an electrical outfit claiming to giv sinusoidal currents, because many of them do not giv the kind of current that is required for sinusoidal stimulation.

There ar, however, several good makes of apparatuses on the market, but as I hav not had experience with them I am not illustrating them here.

The *Sinusoidal current* is an alternating, galvanic current in which the potential rises gradually from zero to a maximum point abov an imaginary base line and then gradually returns to zero and to a like distance below the same base line. Physicians employing spinal therapeutics could hardly carry on their work without this modality.

In using sinusoidal current, one should always realize just what he wants—stimulation or sedation. The *slow-sine* wave produces stimulation, if slow enuf to allow the muscles

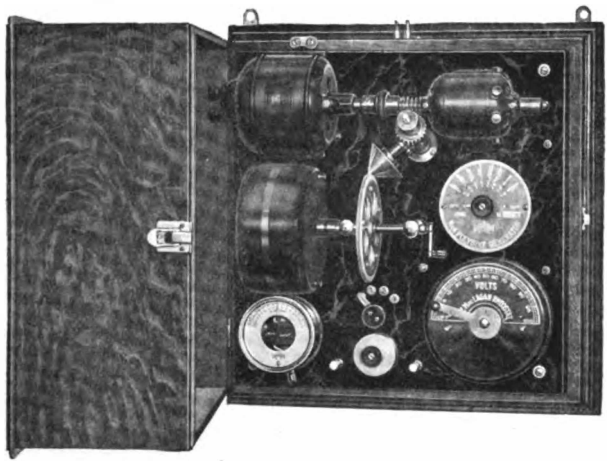


Fig. 209. McIntosh No. 4 Polysine Generator, interchangeable on A.C. and D.C., shown in vertical position as wall plate.

acted upon to come back to rest before the succeding stimulus is applied. The uninterrupted *rapid-sine* wave should be used only for sedation or relaxation. It can also be employd for reducing fat.

The Surging Sinusoidal or Combined Sine Wave is a form of sine wave produced by passing the rapid sinusoidal current thru a rotor, thus producing a slow-sine wave made up of the rapid-sine current. (Fig. 208.)

This modality is especially indicated when stimulating large muscles. It should never be used more than two or three minutes at a time if one wishes stimulation, because

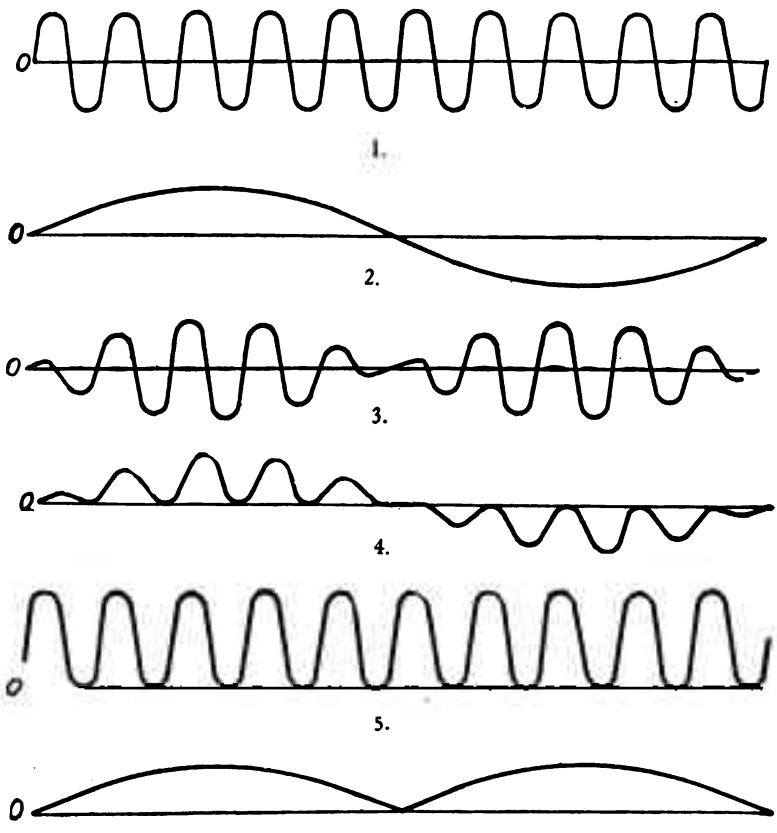


Fig. 210. Shows diagrammatically the modes given by the No. 4 Polysine Generator.

No. 1 Rapid sinusoidal, 1200—3600 cycles a minute.

No. 2 Slow sinusoidal, 10—120 cycles a minute.

No. 3 Surging sinusoidal, 10—120 cycles a minute.

This modality is obtaind by passing the rapid-sine current thru a rotor, thus producing a combined sine wave.

No. 4 Superimposed wave, 10—120 cycles a minute. This modality consists of the combined galvanic and sinusoidal current past thru the rotor together.

No. 6 Slow surging galvanic, 10—120 periods a minute. This current has practically the same sensation as the slow sinusoidal, but the contraction can be concentrated at one pole. Often of value in different forms of paralysis. It contains the chemical action of the galvanic with the stimulation of the slow sinusoidal.

Note: The No. 4 Polysine Generator also givs the Galvanic Current as wel as a control for a Diagnostic Lamp.

the rapid-sine current, of which this wave is made, has a relaxing effect upon the muscles if not interrupted.

The Superimposed Wave is a galvanic current and rapid-sine wave combined and past thru a rotor. (Fig. 208.)

It is a tonic and stimulating modality and should never be used more than a minute or two at a time when used for its stimulating effects.

The Combined Sinusoidal and Galvanic Modality is made up of the rapid-sine current and the galvanic current without passing it thru a rotor. That is, it has the distinctiv polar effects of galvanism. (Fig. 208.)

This modality can be used occasionally for special purposes.

Notis

If one uses an apparatus with a current selector of a convenient dial type, I hav found it advantageous to change from one modality to another during a treatment. For example, one may use the slow sinusoidal modality for 7 minutes, the surging sinusoidal for 2 minutes and the superimposed wave for 1 minute, being particular to *always* turn the current entirely off from the patient before changing the modalities.

By giving the different modalities during one treatment, we hav a varied exercize for the different muscles; and I find I get a better effect than to use one modality stedily during the whole treatment.

Never use sinusoidalization for more than 10 *minutes at a time.*

The *Faradic* current is a rapidly alternating induced current possessing no polarity. There is a wide difference between a rapidly interrupted galvanic, or direct current, and a faradic current. The faradic current is more mecanical than medicinal. It stimulates by rapidly massaging the tissues. Therefore it is tonic and aids metabolism. Its efficiency in reducing fat can thus be explaind. The sinusoidal current is fast taking the place of the faradic current in therapeutics. It is smoother and more easily controld.

Static Electricity is frictional electricity. Its voltage is enormous but its amperage is nil. It requires about 50,000 volts of pressure or "push" to force a current across a spark gap of one inch.

The static mode is vibratory in caracter, but as the oscillations run into the millions a second, the different lengths of waves must be legion. As the nervs of the body ar of various lengths and tensions and as all live nervs ar in a state of vibration, we can redily understand why the static modality is so beneficial to tired or diseasd nervs. Each nerv is supposed to take up its own wave length from the static vibrations the same as one tuning fork wil vibrate when its duplicate is set into vibration. The different modalities that can be employd from the static machine make this form of electricity of great therapeutic value.

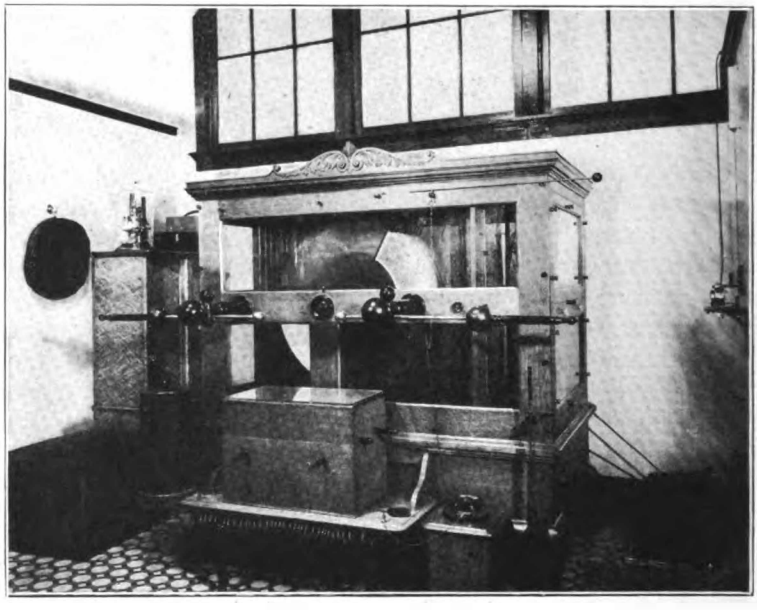


Fig. 211. The author's special Static Electricity Generator and High Frequency outfit. This shows the author's original static spark regulator.

(Nearly all forms of vacuum tubes, including the x-ray tube, can, with suitable interrupters, be excited with the static machine.)

Static modalities vibrate or massage the body from the smallest cel to the largest muscle. They really giv cellular or tissue massage and relieve stasis, thereby helping to restore the polarity of the organism. (Fig. 211 shows my special Static and High Frequency outfit.)

The Sinusoidal current along with the radiations from the powerful incandescent lamp wil do all that static electricity or high frequency currents can do.

High Frequency electricity is oscillating electricity from a condenser or static machine. All forms of high frequency currents ar disruptiv discharges. Condensers can be charged from a static machine or from a coil. The discharges from the former ar smoother and less irritating than from the latter. Special interrupters can be used in connection with

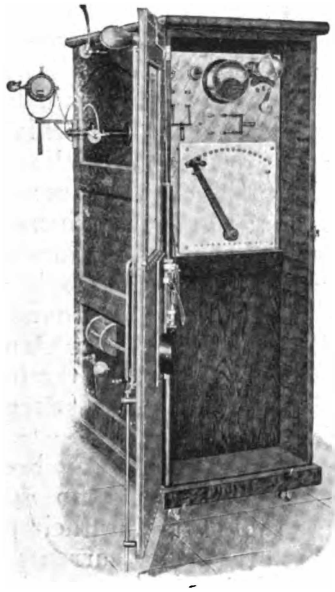


Fig. 211a. This illustration shows the Hogan Silent Roentgen Transformer. This apparatus also contains a high frequency outfit. It is interrupterless, motorless, commutatorless, and noiseless; has a protectiv led-lined door extended, serving as screen to the operator who, standing behind it, can manipulate all of the various controlling devices in perfect safety from exposure to the ray. This outfit I can recommend to anyone who wishes a high frequency and x-ray outfit. M'f'd by McB. & D. Co.

the static machine to take the place of the condenser to obtain certain forms of high frequency currents.

The principal high frequency methods employd in medicin ar the d'Arsonval, the Tesla, and the Oudin, as wel as those from the static machine.

High frequency currents oscillate from 10,000 to 50,000,000,000 times a second.

High frequency currents can be employd in many ways to produce sedation, dilation of capillaries, and celular massage. It is also used to produce the Roentgen rays.

"Thermic penetration" is produced from the d'Arsonval current, and is doubtless a valuable modality, but must be used with a ful understanding of just what it is capable of doing. Unless you ar wel qualified, do not attempt to employ "thermic penetration."

Auto-condensation is a very important modality used in connection with high frequency currents. Its value in the treatment of arteriosclerosis is wel known—consequently its value for treating apoplexy or nefritis. To lower high blood pressure, this modality is very valuable.

High frequency currents ar germicidal; they increase internal body resistance; disintegrate calcareous deposits in the arterial system; lower blood pressure; enhance elimination; liberate pure ozone; righten and increase metabolism.

The x-rays possess therapeutic values similar to other high frequency currents. For fluoroscopic and radiografic work, the x-rays hav no substitute of proved value.

Oxygen and Allotropic Oxygen or Ozone, can be produced by high frequency currents; and the inhaling of properly produced and "washt" ionized air (oxygen vapor) is of great therapeutic value.

Altho high frequency currents hav been used a good deal, yet high-power incandescent lamp radiations as wel as the quartz light, ar rapidly taking their place. Probably the ignorant use of high-frequency currents hav done more to hinder the progress of electro-therapeutics than anything else. Where I formerly used high-frequency modalities and static electricity, I now use powerful-radiant light and the sinusoidal modalities. I find them more dependable and satisfactory in every way.

Caution With X-Ray or Radium

No doubt x-ray in the hands of some is very efficient, but from what I hav seen of x-ray work, the results seem to be as much as x quantity as the ray itself. For instance, acne, which some claim to cure so easily with x-ray, may be cured, but, as a rule, the condition of the skin afterward is

not what we would want charged to our account. I hav had occasion to treat a good many post x-ray cases, and it may be that is the reason why my x-ray tubes ar not being used as much as formerly.

I hav found that the Quartz Light wil do far more therapeutically and in a safe manner, than can be done with the x-ray.

As to radium, I hav had no experience with it, and probably never shal hav. From my conception of radiations and vibrations in matter, it seems that the radiations of radium ar among the most uncertain that one can deal with. We hear very many good reports, but there is a side that we do not see publisht. My advice is to let the "big man" use radium, but tel your patients to keep away from it. There *may* be a time when radium can be used as an exact remedial agency, and no doubt some good has been accomplisht with it; but it is a notisable fact that when some people buy a thousand or ten thousand dollars' worth of radium, the announcement gets into the public press. As a means of "ethical advertizing" there probably has never been anything more advanst. (Perhaps "twilight sleep" or "serums from abroad" hav gone radium "one better.")

CATAFORESIS

Before going into the electrical treatment by cataforesis, it might be wel to mention something of the fysics governing this electrical process.

Cataforesis really means electric osmos. The radical meaning of the term is "electric push," but this is misleading. In reality it means the difference of level in two liquids on opposit sides of a diafram, causd by the passage of an electric current. The higher level is on the side toward which the current flows.

Any substance to be diffused within the patient by cataforesis must be capable of forming a chemic compound.

Neiswanger says: "All metals and all bases, whether they be metallic bases or alkaloidal bases, ar electro-positiv in caracter and wil seek the cathode. The three conditions necessary before electrolysis can take place ar:

"1. The substance must be a conductor of electricity.

"2. It must be a fluid or semi-fluid.

"3. One of these elements must be a metal.

"Whenever we hav water, we hav a metal—hydrogen. Whenever we pass a constant current thru any substance having these three conditions present, electrolysis of the substance is produced in direct proportion to the flow of current maintaind. It is evident, therefore, that whenever we place medicament upon *either* pole of a constant current *electrolysis* of the medicament takes place because such medicament always has present the three conditions mentiond; and the pole from which we apply the medicin depends entirely upon the part of the medicin we want the tissues to take. The anode is only used when the base or metal is the part of the compound desired, but when we would utilize the acid, or that which takes its place, as iodin in potassium iodid, the solution must be applied from the *cathode*.

"The action of *cocain* by cataforesis is much better and quicker than by hypodermic injection and seemingly without the danger of the latter process. We ar able to produce the most profound anesthesia thru the skin into the deeper tissues. Opening abscesses, removing small growths, and many minor surgical operations ar done without any appreciable pain to the patient.

"If to this mixture we ad an equal amount of adrenalin solution, the tissues ar almost immediately blancht and the operation is made bloodless."

Inasmuch as *quinin* or *cocain,* or any of the other alkaloids, ar alkaloidal bases, they wil seek the *cathode.* Therefore they must be applied from the anodal terminal, that is, from the positiv pole. The same applies to any basic salt, such as zinc or copper sulfate, or the metals themselvs.

Thiosinamin is a bitter crystallin substance formd by treating volatile oil of mustard with ammonia. It is soluble in water, alcohol or ether and has a selectiv action for *scar tissues.* If we wisht to diffuse this substance thru the tissues by electrolysis we would put the *thiosinamin solution* on the basic pole, that is, on the *positiv terminal.*

Before I leave the subject of cataforesis in the treatment of disease, I wish to state that if one fully understands the principles underlying the use of the constant current and realizes just what can be done by means of cataforesis, there is really no end of work that can be done by it. Dr. Massey, of Philadelphia, has proved beyond all doubt that cancers, as wel as many other growths, can be easily and effectually cured by single or bi-polar ionization by means of zinc needles. One does not hav to hav a metal in solution to use it cataforically, as the water in the tissues wil act with the soluble metal, causing an interchange of ions. Dr. Massey's book is very explicit. I hartily recommend both Dr. Massey's and Dr. Neiswanger's books.

ELECTRODES

Any one practising electrical therapeutics should look wel to the kind of electrodes he uses. They ar to the electrical therapeutist what the mecanic's tools ar to him. Some persons wil do good work with "any kind of a tool," but a good deal of one's success lies in having proper implements to work with.

I want to especially mention about the *indifferent electrode*. This I hav found by long experience to be best made of clay. I have tried all kinds of felt cloth, cotton,

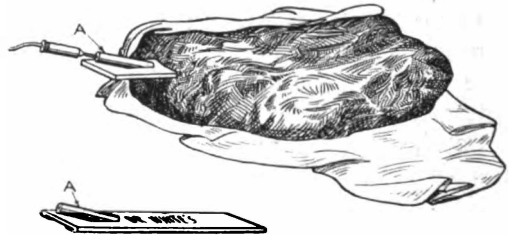


Fig. 212. The clay pad such as I use for the indifferent electrode. *A* is the Conducting Cord attachment or Terminal to be used in clay pads.

fiber, sponges, etc., but none can compare with clay. Ordinary modeler's clay wil anser very wel, but the best I hav seen is a special clay manufactured by the RadiumactiV Co., Columbus Ohio. This clay when mixt with one part of glycerin to nine parts of water and a few drops of wintergreen added, makes an ideal pad. It holds its place and is an excellent conductor of electricity.

Fig. 212 illustrates this clay electrode. It should be wrapt in cheesecloth and kept in an electric sterilizer, Fig. 213, or any double-bottom steaming receptable. The bottom of such a sterilizer should hav legs about half an inch long solderd on so the pad wil not lie in the water.

Just before using it, the water can be heated and the steam wil heat the electrode to make it comfortable and at the same time keep it moist. I keep one piece of cheesecloth on the clay pad all the time so as to hold it in shape and make it easier to handle.

These clay electrodes can be made of any convenient size, depending upon the part of the body over which they to to be used. For the abdomen three or four inches square is needed. They can also be molded in shape to lay over one or two vertebrae, over the chest, on both sides of the nee, and in fact any place on the body, and they wil remain in place.

Some put the metal tips of the conducting cord into the clay pad. This is bad practis as the wire terminal soon corrodes and a poor connection results.

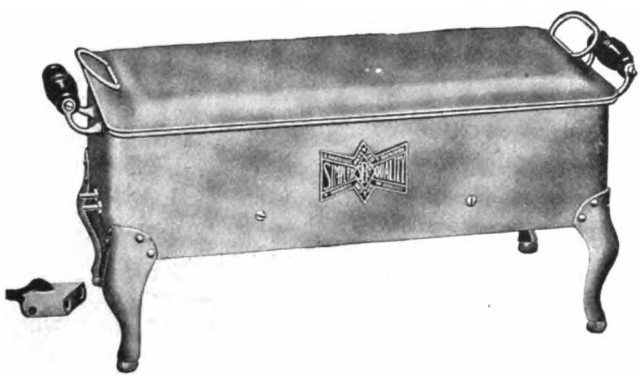


Fig. 213. The kind of electric sterilizer I warm the clay pads in.

Fig. 212 shows a little Conducting-Cord Attachment or Terminal made of copper, and the copper for the cord tip is solderd on at a slant. I devized this cord tip insert so as to leave the metal tip out and hav it so it wil not touch the bare skin of the patient.

Over the patient's skin I put a piece of plain cheesecloth that has been wet in plain warm water, first rubbing the skin with it so as to make it uniformly moist. I then place the coverd clay pad on this piece of cheesecloth. By following out this tecnic, a piece of clean cloth is always used on the patient's body and the procedure is a sanitary one.

Color of Connecting Cords

In connecting up electrodes with a wall plate, or other apparatus such as the polysine or universalmode, I always use a *red cord for the negativ side* and a *blue cord for the positiv side.* This facilitates the work when one is using galvanism, and is convenient when using any modality. When the cords ar both alike, one has to handle them over to find out where they go, especially if long ones ar used.

A Sand Pad

To hold the clay electrode in place and to giv better contact with the skin, as wel as to enhance the ergotherapeutic effect of the electrical modality, I use sand pads over the clay pad. Fig. 214 illustrates the sand pad that I use. This pad is about fourteen inches long, nine inches wide and thick enuf to make it of any desired weight. The best

Fig. 214. Showing a sand pad such as I use over clay electrodes as illustrated in Fig. 148.

method of arranging this is to hav one pad weigh ten pounds, another fifteen pounds, and another twenty-five pounds, the weight depending upon the part of body we want to treat.

These sand pads ar made as follows:

A regular bag is sewd of the correct size and then turnd wrong side in. The required amount of sifted, beach sand is put in after it has been thoroly baked and sifted. The bag is sewd up and another bag of hevier muslin is put over that. Over that is put a bag made of stork sheeting so as to make it waterproof. If the sand is kept in this manner, it wil always conform to any shape that is desired.

Fig. 148 shows how I use one of these pads on the patient's abdomen. I first place the clay electrode on the abdomen as before described. Then I connect the conducting-cord, *C*, to the clay pad terminal. *B* represents a piece

of rubber tubing slid over the conducting-cord and pusht up close to the clay-pad terminal. The reason for this is that when a weight is placed over the conducting-cord, the moisture from the pad wil often cause the current to leak thru the cord to the body and make the treatment very unpleasant to the patient. By putting on this piece of tubing, that annoying trouble is avoided.

Over the clay pad is then placed the sand pad, *A*. This holds the clay pad very closely to the abdomen and as the electric current is past thru it, the muscles wil hav to do enuf work to move the weight of the sand pad before the sand pad wil move.

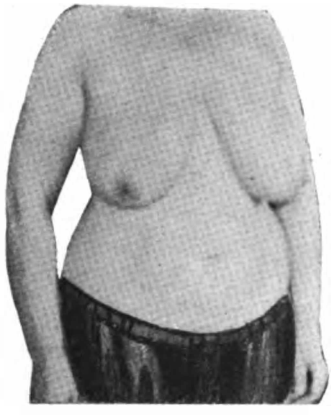


Fig. 215. Showing a patient cured of persistent backake by giving sinusoidal current over brests, thereby reducing their weight and strengthening the muscles.

This is a great adjunct to electro-therapeutic treatment.

If the brests wer being treated one clay pad could be put over each brest or a large one could cover both brests. Over them is placed a suitable sand pad. One terminal is used at one brest and the other terminal at the other.

When I am treating the brests and vagina or rectum at the same time, I use a bifurcated cord to the brest pads.

Fig. 148 shows exactly how I treat the patient, having one electrode in the vagina or rectum and the other over the abdomen. It wil be notist that I hav the powerful incan-

descent lamp directed over that part of the body which is not coverd with the pad. In the case illustrated, the abdomen and rectum ar being treated and the big light is shining on the bare chest.

If I wer treating the brests, I would hav the light shining on the bare abdomen. This lamp, being about thirty-six inches away from the body, allows the radiation to reach at least half of the body at one time altho it is focust over the part that I want to hav a special amount of heat and light.

If I wish to reduce fat on any part of the body, such as the thighs, busts, or abdomen, I place the clay pads as above described and use very hevy sand pads.

Fig. 215 illustrates a patient cured of persistent backake by placing clay pads over the brests and giving intermittent rapid-sine current thru them. The treatment reduced the weight of the brests and strengthend the muscles.

VACUUM ELECTRODES

When speaking of vacuum electrodes for high frequency work, you wil notis that I always mention *surface* electrodes. I am wel aware that many ar using vacuum electrodes for vagina, rectum, urethra, and the nasal passages. I doubt whether the users realize the risks they ar running. I hav had a good deal of experience with electrodes of all kinds. From a fysicist's standpoint, the glass, vacuum electrode for cavities seemd irrational, but because others used them with apparently good results, I did the same, but not until I had had my electrodes specially made of the very best glass obtainable. Notwithstanding all these precautions, I had a vaginal electrode burst while in operation, resulting disastrously. (Fig. 216 shows this electrode as taken from the vagina. Some of the glass was lost in the tissues. The tube was filld with blood and the vagina had to be evaginated to withdraw the broken glass.)

Fig. 216. Showing a glass Vaginal Electrode that exploded in the vagina. Notis the blood in the inner tube and handle.

I recently herd of a glass, vacuum electrode breaking in the rectum before the current was turned on. It broke from what is know as "self-destruction." The vacuum drew the mucous membrane to the broken edges, thereby lacerating it. A serious surgical operation was performed and the patient has had a paralyzed rectum ever since, and always wil hav.

Another case has just been reported to me. A glass, vacuum electrode used in the urethra of a male. The tube broke while in situ and to remove the glass and repair the injury the penis had to be split open. The organ was ruind and a false urethral opening had to be made.

I hope I can impress it upon you that the danger is too great to take the unwarranted risks.

When I discarded glass, vacuum electrodes, I began experimenting with different kinds of metals for this purpose, using spun electrodes of copper, brass, aluminum, and silver. I see no difference in the action of any. The object

of these electrodes in a cavity is for *tissue massage.* It is to relieve stasis and thereby enliven circulation and elimination.

Some hav the erroneous idea that the nitrous oxides, or ozone, given off from the surface of a glass, vacuum electrode enhances the benefit of the treatment. If you wil hold a glass electrode tightly in the wet hand and then about one-quarter of an inch away from the hand, I think you can judge for yourself just how much there is in that theory. *The theory is baseless.*

A mucous membrane cavity like the vagina, rectum or urethra, closes tightly against the electrode that is used. I hav found that high frequency currents in these cavities ar not at all essential, but that the static-wave current is beneficial, as is also the sinusoidal current, either rapid or slow, according to whether we wish to produce sedation or stimulation.

If you want to use the high-frequency current in the cavities, you can hav no trouble in using it with a metal electrode. Some advance the theory that "the ozone given off in the tissues from the vacuum tube in a cavity" (if such be possible) is also beneficial. We must remember that the blood is circulating thru every portion of the body. If there be any ozonization of the tissue, *it must be thru the blood stream* and, inasmuch as the blood stream is constantly moving by the electrode, we must ozonate *all* the blood in the body before it wil be of any special benefit to any localized area. In other words reducing stasis and increasing the flow of the blood in an inflamed area is doubtless of value, but why not giv the oxygen vapor thru the *lungs* and thereby reach every tissue of the body? For this purpose I use what I term the *oxygen-vapor treatment.*

In giving vacuum surface electrode treatments, if I wish to produce a very profound hyperemia, I place a dry towel between the electrode and the skin. Experiment on yourself with these different modalities and then you wil be more competent to judge of the effect on the patient.

In using any modality, or in giving any advice to a patient, always ask yourself if you would want to hav the same applied to you. If this is always carried out, physicians wil be a little more cautious in giving dangerous treatments, or taking undue risks, or in advizing foolhardy operations.

ELECTRODES AND ATTACHMENTS THAT I USE

As so many of my pupils and others ar continually inquiring as to what electrodes I would recommend, I giv here illustrations of such electrodes as I hav found valuable for electro-therapeutic work.

The connector shown in Fig. 217 is a very valuable and convenient attachment for anyone who is doing electro-therapeutic work to hav on hand. I would advize anyone to hav at least half a dozen of these in their offis.

Fig. 217. Dr. Herdman's Connector, for connecting two conducting cords or for attaching to sheet metal.

Fig. 218. Dr. Herdman's Connector, for attaching conducting cord to sheet metal.

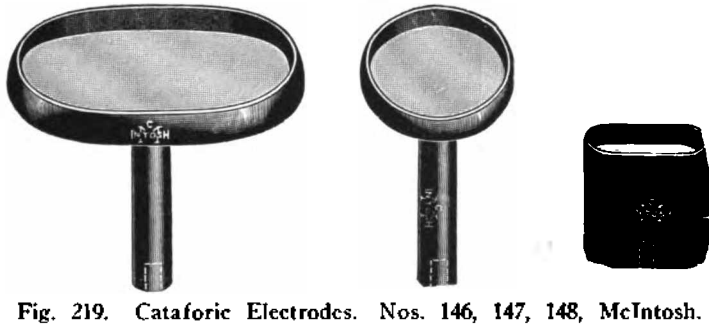


Fig. 219. Cataforic Electrodes. Nos. 146, 147, 148, McIntosh.

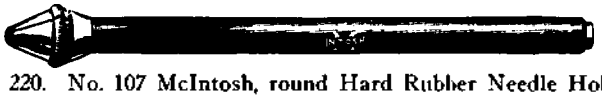


Fig. 220. No. 107 McIntosh, round Hard Rubber Needle Holder.

Fig. 218 shows a similar attachment but it is not as finisht.

Fig. 219 shows different styles of cataforic electrodes that I hav found very valuable.

Fig. 220 shows the old style, long needle holder. This I find preferable to the short style that some use. The ad-

vantage of the long style is that the operator does not burn his hand with it as he does with the short one.

The best needles I hav found for depilatory work ar the Hayes' Bulbous Point.*

Fig. 221 shows a very convenient interrupting handle for manually interrupting an electric current. This is especially valuable for interrupting the rapid-sine current if one does not hav a metronomic interrupter.

Fig. 222 shows the universal handle such as can be used on nearly all of the electrodes that one wishes to use.

Fig. 221. No. 87 McIntosh Universal Handle, with Interrupter.

Fig. 222. No. 1 McIntosh Universal Handles, with Spongio-coverd Disc.

Fig. 223. Showing Dr. White's Uterin Elevator and Vaginal Electrode made by McIntosh Battery & Optical Co., Chicago.

Vaginal Electrode

Fig. 223 shows my uterin elevator and vaginal electrode. This electrode was first made out of spun copper

*If anyone is interested in depilatory work, I would advize them to read Dr. P. S. Hayes' little work entitled *"Electricity and the Methods of Its Employment in Removing Superfluous Hair and Other Facial Blemishes,"* publisht by McIntosh Battery & Optical Co., Chicago.

I would also advize everyone who is interested in Electrotherapeutics to read the last edition of Dr. Charles S. Neiswanger's book entitled "Electrotherapeutic Practice." This bork is also publisht by the McIntosh Battery & Optical Co.

to be used with static electricity. Later I had it made of solid aluminum to be used with the galvanic or sinusoidal current.

For dysmenorrea and other conditions where an electrode of this nature is indicated, I have found this electrode to be better than any other.

This uterin elevator and vaginal electrode is also ideal for use with pulsoidal current, as illustrated in Fig. 148.

In using any unipolar vaginal or rectal electrode, I hav found that using the weighted clay pad over the abdomen greatly enhances the beneficial results.

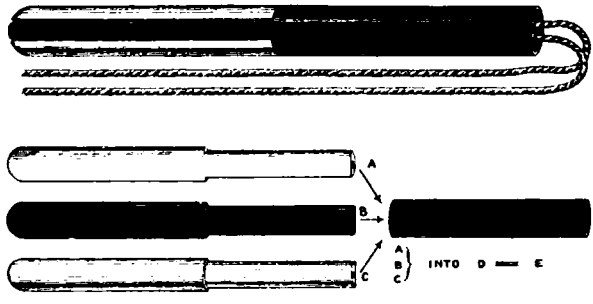


Fig. 224. Showing Dr. White's Bi-Polar Rectal Electrode. *A* and *C* ar metal. *B* and *D* ar fiber. Cord tip holes ar shown at *A* and *C*. Manufactured by McIntosh Battery & Optical Co., Chicago.

Radiant light should also be used in conjunction with any of these electrical treatments. This has been mentiond but is worth repeating. Fig. 148 shows this tecnic very wel.

Bipolar Rectal Electrode

Fig. 224 shows my Bipolar Rectal Electrode. This electrode wil be mentiond when discussing the Pulsoidal Current and when discussing Constipation.

This no doubt is one of the most valuable electrodes that an electro-therapeutist can hav, especially when he uses an interrupted rapid-sine current—the pulsoidal current.

Fig. 225 shows a hemorroidal electrode that I like better than any other style on the market. This electrode should always be coverd with gauze and goldbeaters' skin before it is used. I consider goldbeaters' skin much more suitable for a covering to copper electrodes than chamois skin for the reason that it is not as ruf and does not irritate the mucous mebrane so much when it is being enterd. I know there ar many advocates for chamois skin or kid and they ar getting good results, but so far I hav found the goldbeaters' skin, wrapt over a piece of gauze, far better. How-

Fig. 225. Showing my new style Hemorrhoidal Electrode. Manufactured by McIntosh Battery & Optical Co., Chicago. This electrode must be coverd with gauze and gold beater's or chamois skin before it is used.

Fig. 226. Copper Rectal Electrode (Neiswanger), 53A McIntosh.

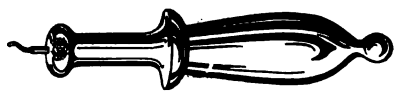


Fig. 227. Showing Valens Rectal Dilator and Electrode. Made of solid aluminum.

ever, the goldbeaters' skin must be thoroly perforated with a fine needle before it is used.

Fig. 226 shows the Neiswanger copper rectal electrode. While this electrode has been used for many years, the fault I find with it is that the entering end is too large, and many patients wil not endure the pain that it causes. Another fault is that it has no handle and no place to put a handle on. The hole in the rubber ball is for passing the cord tip thru. This cord tip is liable to come in contact

with the patient's skin, and if it does, the patient is going to let you hear from it and may not come back for another treatment. More is said regarding this electrode when discussing Hemorroids.

Fig. 227 shows my Rectal Dilator and Electrode. This electrode I hav found to be very valuable for safe and sane rectal dilation. It is also very valuable in giving the pulsoidal or other current thru the rectum for general stimulation.

Fig. 228. Showing Dr. White's Adjustable Binocular Sponge Electrode.

Fig. 228 shows my Binocular Sponge Electrode. I devized this electrode because at the time there was none on the market with the universal handle attacht and with a nose curv large enuf to bridge the nose or allow the sponges to go over the eyes of some patients with a prominent nose or deep-seated eyes.

Fig. 229 represents a double-eye sponge electrode of another style. This I believe is now made so a universal handle can be put on it.

Fig. 230 shows a double ear electrode with small sponges attacht. This wil also take the large, regular size sponge terminals. This electrode is now made so that the center metal piece cannot burn the skin. The trouble with

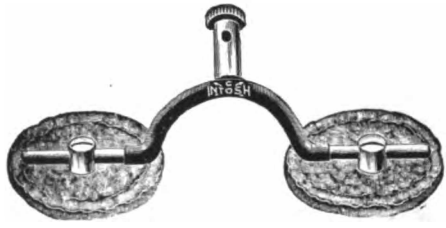


Fig. 229. No. 74 McIntosh Double-Eye-Sponge Electrode, adjustable.

Fig. 230. No. 48 McIntosh Double-Ear Electrode, insulated.

Fig. 231. Neiswanger's Vaginal Cataforic Electrode. It consists of a perforated copper ball, mounted on an insulated tube,, fitted with nozzle and cord tip connection, affording a means of applying the oxy-clorid of copper together with a cataforic dosage of a desired medicament. No. 95 McIntosh.

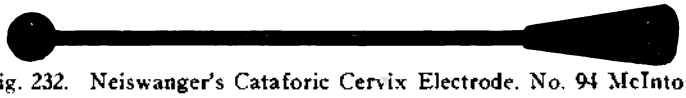


Fig. 232. Neiswanger's Cataforic Cervix Electrode. No. 94 McIntosh.

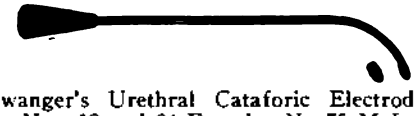


Fig. 233. Neiswanger's Urethral Cataforic Electrode, including two olivs Nos. 18 and 24 French. No 75 McIntosh.

them formerly was that the metal being bare, the neck would be burnd while giving the treatment. With the new style this is obviated.

Figs. 231, 232, 233 illustrated cataforic electrodes.

Fig. 234 shows a curvd vaginal electrode that is useful to use in a small vagina.

Fig. 235 shows a Bipolar Vaginal Electrode that is very useful in many conditions of relaxt and atonic vaginal walls.

Fig. 236 shows a copper electrode that is often very useful in treating erosions about the external os uteri.

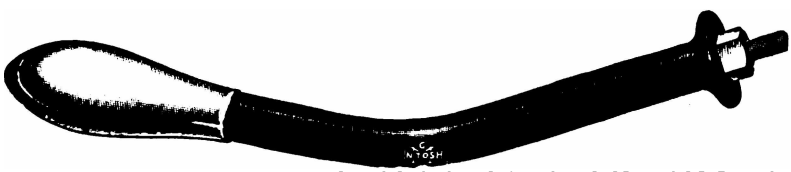


Fig. 234. Curvd Vaginal Electrode, nickel plated, insulated, No. 64 McIntosh

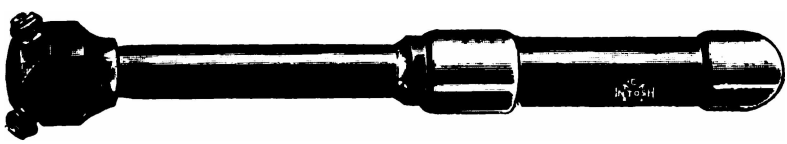


Fig. 235. Dr. A. H. Goelet's Bipolar Vaginal Electrode, nickel plated. No. 86 McIntosh.

Fig. 236. Fitz Hugh's Copper Electrode for treating erosion of the external os by metallic electroylsis. No. 91 McIntosh.

Fig. 237. Carbon Cylinder Electrode. No. 142 McIntosh.

(I now recommend the use of the quartz light thru a vaginal speculum in place of any other electrical treatment for cervical erosions. I hav found the quartz light to be much better than cataforesis for that condition.)

Fig. 237 shows a carbon cylinder electrode that many find very useful in vaginal electrical work.

Fig. 238 shows a urethral staf for carrying assorted olivs as shown in Fig. 239. These olivs ar often very useful to use in connection with negativ galvanism for urethral dilation in case of strictures.

Fig. 240 shows a set of copper intra-uterin electrodes. I formerly used these quite often, but I now try

Fig. 238. Urethral Electrode, insulated with hard rubber. No. 21 McIntosh.

Fig. 239. Assorted Olivs, set of twelv, nickel plated, to fit No. 20 or No. 21 Electrode. No. 70 McIntosh.

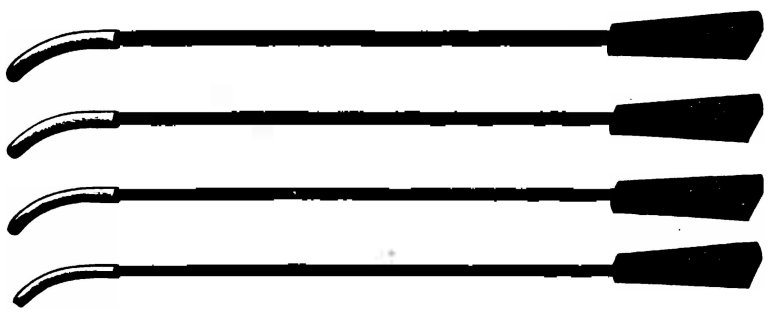


Fig. 240. Dr. Goldspohn's Copper Intra-Uterin Electrode. No. 119 McIntosh

to find some other method because I do not like to use electricity inside of the uterus if it can possibly be avoided. I hav found that almost all intra-uterin treatments can be avoided by using the sinusoidal currents and placing the uterus in proper position.

Fig. 241 shows some intra-uterin negativ dilating electrodes. While these ar sometimes needed, yet I would advize anyone to be very cautious about using them.

Fig. 242 shows a curvd prostatic electrode. This is very good indeed when one wishes to localize the sinusoidal current over the prostate. However, I hav found that the bipolar rectal electrode, shown in Fig. 224, as a rule, is superior to this electrode. The reason is that we ar stimulating the nervs about the coccyx at the same time that we ar contracting the prostate. If, however, one wishes to

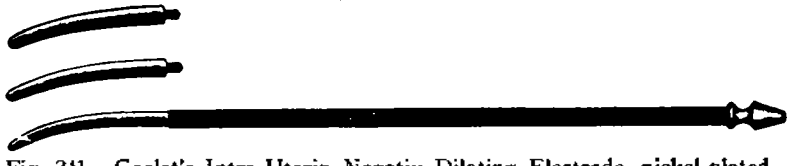


Fig. 241. Goelet's Intra-Uterin Negativ Dilating Electrode, nickel-plated, set of three bulbs with one staf. No. 115 McIntosh.

Fig. 242. C. W. Brown Prostatic Electrode. No. 126 McIntosh.

Fig. 243. Rectal Electrode, insulated with polisht hard rubber, nickel plated. No. 7 McIntosh.

place a very powerful stimulation over the prostate and place the indifferent electrode over the abdomen, this electrode is exceedingly good.

Fig. 243 shows a small rectal electrode. This is very useful in treating very small people or for treating a very contracted sfincter. In the latter case, however, I find it is best to dilate the sfincter with the rectal dilator shown in Fig. 227 and then use the bipolar rectal electrode in place of this. This electrode is also valuable in treating about the uterus in a young girl.

Fig 244 shows a copper fistula electrode. These come in various sizes. A piece of rubber tubing can be used over these electrodes so they wil enter only just so far.

Since the quartz light has been so perfected and long pencil, quartz electrodes ar to be had to use in connection with the quartz light, I find in many instances that is a better method of treating fistula than the copper electrode.

Of course there ar conditions where the copper electrode is preferable to the quartz light, but I would advize anyone who has any fistulae to treat to try out the quartz light first before using any other modality.

Fig. 244. Copper Fistula Electrode. No. 143 McIntosh.

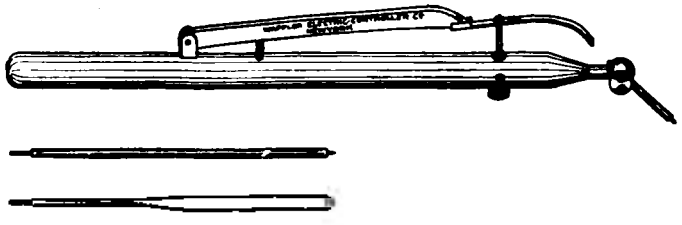


Fig. 245. Fulguration Point Electrode, including three points. This is to be used with a high frequency current. No. 154 McIntosh.

Fig. 245 shows a very simple and useful fulguration point electrode. Altho I hav used all kinds, some of which wer very expensiv, yet I found this is just as good as the others. (There ar many conditions in which I formerly used fulguration where now I use the quartz light thru special quartz applicators.)

It must be rememberd that these fulguration point electrodes can be used just as wel with the small high frequency outfit as with the very elaborate ones.

THE SINUSOIDAL CURRENTS IN SPINAL THERAPEUTICS—NEW DATA

In my experience for tracing out different areas of the spine to see what effect was produced within the body when giving stimulation, I hav used the sinusoidal current. In all my writings and teachings of this work, I hav stated that the *slow*-sine wave was the one to use for stimulation or, in other words, to produce reflexes. Inasmuch as I could not find anything in literature regarding the speed of making the intervals between the alterations of stimulating current for muscles, I publisht an article in the Journal of Advanced Therapeutics of March, 1910, calling the attention of fysical therapeutists to some of my experiments which showd that stimulation could not always be given the same on all parts of the body. I hav carried on these experiments now for many years, using electrical currents of all kinds and with all sorts of electrodes and applicators, and hav made some very interesting findings.

About a year after d'Arsonval described his alternating magneto-electric current, to which he applied the term, "sinusoidal," Dr. J. H. Kellogg of Battle Creek red at the annual meeting of the Electro-Therapeutic Association in 1893 a paper describing his work with the sinusoidal current and its effects upon the muscles, and consequently upon metabolism.

Since then many people hav written and rewritten articles on the subject of the sinusoidal current; but none of them, so far as I can find, hav ever been specific regarding the rate of speed at which the alternations should be given. Some hav described the use of the sinusoidal current without making any reference as to whether it wer a *rapid*-sinusoidal current or a *slow*-sinusoidal current.

The regular alternating current (AC), such as is used for electric lighting, is in reality a rapid-sinusoidal current,

but it has not been very successfully used as a therapeutic mesure.

In all my work where I hav wisht to produce *stimulation,* I hav used the *slow*-sine wave, that is, an alternating current, without any special polar effect, and alternating its cycles slowly enuf to allow the muscles acted upon to come back to rest before the succeding impuls is given.

For several years I hav been experimenting with the *rapid-sine wave,* or the regular alternating current, used in a manner which as far as I know is original with me. I put a hand interrupter in series with one of my conducting cords and, holding that in one hand and taking hold of the patient's puls with the other hand, I would make and break this current *syncronously with the hart beat.* This I hav described is some of my writings and lectures as *"stimulation syncronous with the hart beat,"* or intermittent-energy syncronous with the hart beat. When giving this form of treatment to a person with tachycardia, my hand became so tired that I could not carry on the experiment in the manner I wisht.

I took a Maelzel metronome and so arranged it as to make and break the current at any speed I desired. By watching the contraction of the muscles, I observd what I wrote about years ago—that the large muscles did not hav time to came back to rest while being stimulated at a rapid rate. I then began experimenting with the *respiration as the basis of speed* for the making and breaking of the stimulating current. Taking my cue from the normal rate of the hart beat in proportion to the respiration (the fysiologic rythm), that is four to one, I would ascertain the respiration of the patient and set the oscillating rate of the metronome to four times that of the respiration. I immediately found that I was obtaining results that I had never been able to with any other method of spinal stimulation.

I then began using this same current interrupter in like manner for vaginal and rectal treatments and found that for treating those parts I obtaind therapeutic results in a shorter time and more effectually than by any other method I had ever used.

When I lookt into this more thoroly, I found that my interrupter was so arranged that one beat made a longer electrical contact than the other. I then tried making the

intervals between the contacts equal, but did not get the same results as when the intervals of stimulation wer uneven.

Rate of Respiration Guide to Amount of Stimulation

In my experiments I found that to produce reflexes in various individuals it required a greater amount of stimulation when the respiration was at the rate of fifteen to the

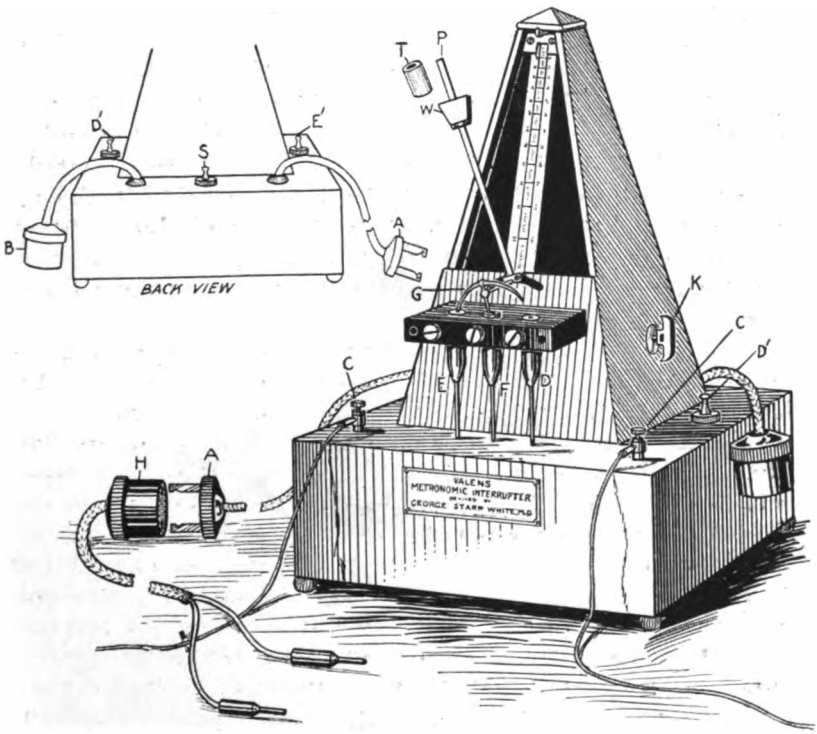


Fig. 246. Valens Metronomic Interrupter, style D, for producing the Pulsoidal Current.

minute than if it wer twenty to the minute. This held true in the same person and in different persons. For example, if a person has a respiration of fifteen it requires greater stimulation to produce the same results than if he has a respiration of twenty. The reason for this seems to be very plain. If a person is breathing slowly, he is generally cool

and collected and it requires more to stimulate him than if he is excited and breathes rapidly, and a person who normally is of a plethoric disposition, or breathes slowly, requires more stimulation than a nervous or excitable individual who breathes more rapidly. At any rate, the rule seemd to hold good—that *the stimulation required for exciting reflexes is in direct ratio with the rapidity of the respiration,* other conditions being equal. Of course we hav to take into consideration the resistance of the skin in different individuals.

At first I did not know how I was going to gage the stimulation to meet the condition of the patient, but when watching the effects of my metronomic interrupter I found that the slower the instrument oscillated, the longer the contracts wer, and consequently I was giving more stimulalation to the individual the slower the instrument oscillated.

From these findings I devized the instrument shown in Fig. 246 which I call the *Valens Metronomic Interrupter.*

VALENS METRONOMIC INTERRUPTER

DESCRIPTION

Fig. 246 shows the front of this device as wel as the back of it.

The apparatus is made of birch-mahogany, piano finish. The mercury-dip platform is made of polisht fiber. Each part is made of the very best material suitable for its particular use.

This Interrupter is so made that it can be used for interrupting a 110-volt lighting circuit and thereby it can be used for giving Bio-Dynamo-Chromatic Therapy (intermittent-light treatment); or it can be used for taking the current directly thru a current controller and interrupting it.

Fig. 247. Showing the No. 1 "Sinustat" Sinusoidal Current Controller, manufactured by Ultimo Physical Appliance Co. of Chicago.

H represents the cord and receiving terminal that is attacht to any form of current controller.

A is the terminal of the receiving or feeding conductor to the instrument.

The current passes into the back of the base and is carried to the mercury dip wels *E,F,* and *D*. *F* is continually in contact with the walking beam *G* while *E* and *D* ar in contact only when the pendulum *P* oscillates.

K is the key which winds up the clock movement in this instrument, which causes the pendulum to oscillate. One winding wil run the mecanism for about forty minutes.

C,C ar the binding posts to which the patient terminals, or cords, ar attacht.

T is a little piece of rubber tubing which, when placed over the pendulum *P*, holds one side of the walking beam in contact with the mercury and thereby allows the uninter-

rupted current to pass thru it. This is used when one wants to dissipate a reflex or cause relaxation.

W is the weight that can be moved up and down on the pendulum and regulates the intervals of the oscillation.

Back of this pendulum is a graduated scale markt off in numbers representing the beats to each minute.

The walking beam on the side that enters the mercury dip-cup *E* is a little shorter than that which enters the mercury dip-cup *D*.

The plunger switch *E'* cuts out or puts in the mercury dip-wel *E*.

The plunger switch *D'* cuts out or puts in the mercury dip-wel *D*.

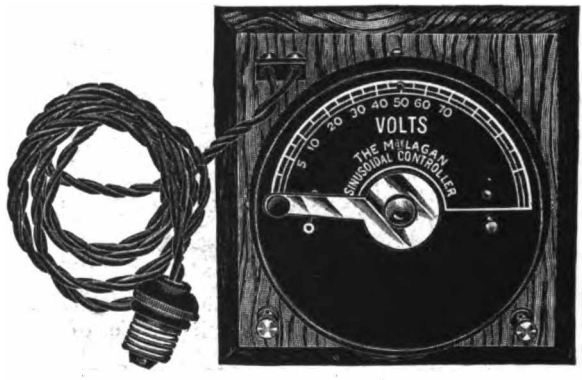


Fig. 248. Showing the MacLagan Sinusoidal Controller manufactured by McIntosh Battery & Optical Co. of Chicago.

These mercury dip-wels ar fild with mercury up to within about 1-32-inch of the top. The top is so arranged that the mercury wil not spil under ordinary conditions.

Connecting rods go from the mercury dip-wels *E*, *F*, and *D* to flexible connections within the base so that these mercury dip-wels may be lowerd or raisd to make the length of the stimulation as much or as little as one may desire. For example, if the mercury dip-wel is elevated, the walking beam contact wil be just so much longer in the mercury. If the dip-wel is lowerd, the duration of the stimulation wil be just so much less.

Plunger switch *S* controls the condenser in the base of this instrument so that the current may be taken directly off

a 110-volt circuit, past thru the condenser and out at *B* for intermittent-light treatment.

When the current is taken off the terminals *C,C* the plunger switch *S* must be off to obtain the *intermittent* current.

When the patient is being treated directly from the terminal posts C,C the current must always be taken thru the current controller.

If for any special condition we wish to use only the mercury dip-wel *E*, we would raise the plunger switch *D'* which would cut out the mercury dip-wel *D*.

Should we wish to use only the mercury dip-wel *D*, we would raise the plunger switch *E'* and thus cut out the mercury dip-wel *E*.

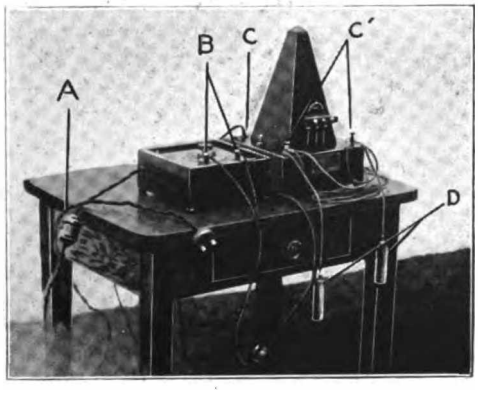


Fig. 249. Valens Metronomic Interrupter and the No. 1 Sinustat combined. Notis that the Sinustat has been removed from its original case and put into a form to match the Interrupter. This makes an elegant outfit. *A* is the feed current from the 110-volt lighting fixture. *B* ar the binding posts from which the controld current goes to the feed plug *C* of the Interrupter. *C'* ar the binding posts from which the Interrupted current goes to the patient electrodes of any kind *D*.

For all ordinary treatments, we would hav both plunger switches *D* and *E* down, that is, "on."

The Current Controller or Reostat

Any reliable controller wil anser, the simplest and most practical of which ar probably the No. 1 "Sinustat," illustrated in Fig. 247 or the MacLagan Sinusoidal Controller

illustrated in Fig. 248. If a physician has a wall plate with a reostat in it, that can be used. In fact, any device for controlling the rapid-sine or alternating current from one volt up to seventy or one hundred wil anser the purpose.

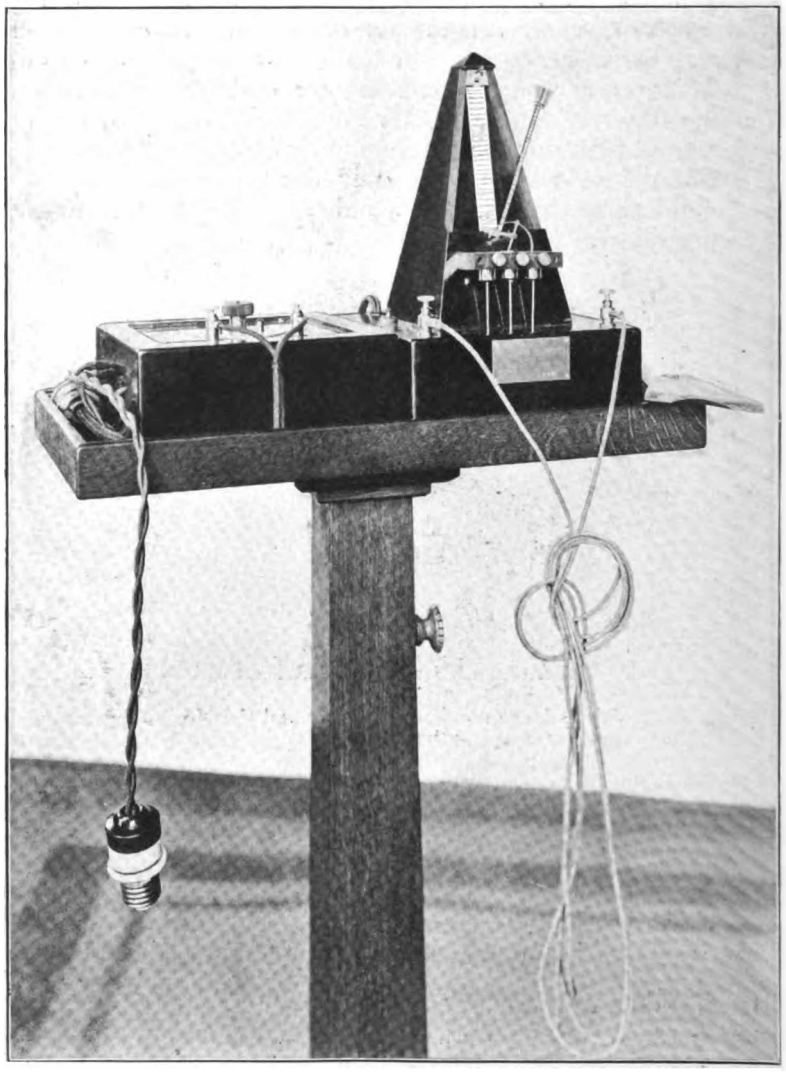


Fig. 250. Valens Metronomic Interrupter and a No. 1 Sinustat fitted up in a tray on a Valens Adjustable Pedestal. This outfit is portable and elegant.

I use the controller on the Universalmode or No. 4 Polysine, as wel as the No. 1 Sinustat and the MacLagan controller.

Fig. 249 shows and explains the outfit I use—the Controller and Interrupter combind.

Fig. 250 shows how the current controller can be fixt up to match the Metronomic Interrupter and both arranged in a tray and fitted to an adjustable pedestal. This makes a most elegant outfit which is portable.

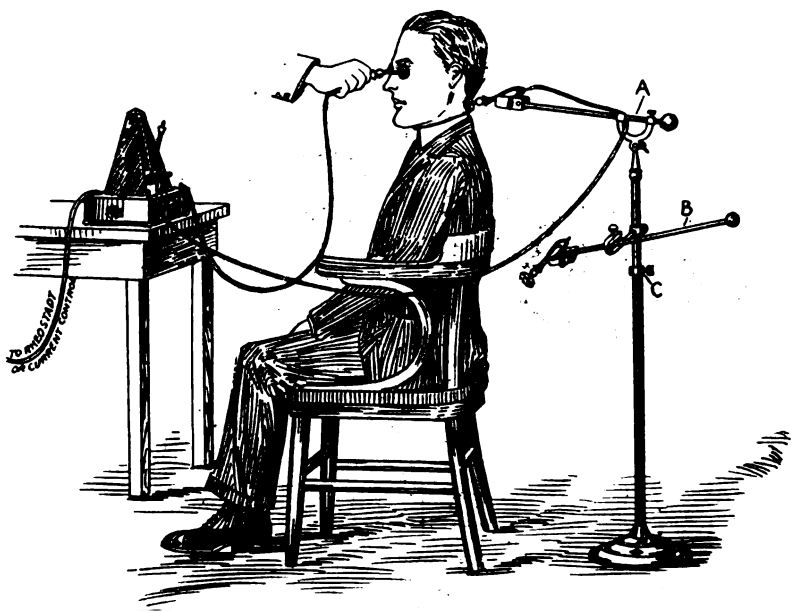


Fig. 252. Showing the Pulsoidal Current being used thru my Binocular Sponge Electrode and over 2d and 3d Cervical Vertebrae. Notis the modified x-ray-tube holder. *A* and *B* ar adjustable rods. They can be moved in any direction. *C* is a binding collar to hold the movable upright at any desired height. Any good wood turner can make these rods and wooden clamps. Notis that the electrode handles ar flattend on two sides, so the clamps wil hold them more securely.

Methods of Using Valens Metronomic Interrupter

The manner of procedure is to ascertain the rate of respiration of the patient, multiply that by four and set the weight of the pendulum opposit that number. For example,

if the respiration is eighteen, I set the metronome to oscillate at the rate of seventy-two beats to the minute.

Thru various forms of hand electrodes, I then use a bifurcated cord to conduct one side of the current while the other side is connected to a regular sponge electrode and applied over the spine at whatever area I wish to stimulate.

So far the results achievd from this modality hav been fenomenal.

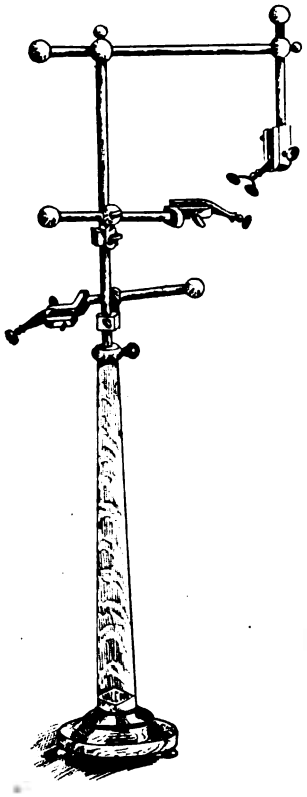


Fig. 253. Valens Multiple Electrode Holder. Notis that there is one adjustable electrode-holding rod for Binocular Electrotherapy and two others that can be used on spine. This Electrode Holder is made of hard wood and is an elegant outfit. The base is loaded with metal. Any good wood worker can duplicate this outfit.

This same modality can be used for rectal, vaginal, or any other treatment where we can use the sine-wave current or the static-wave current.

By stimulating over the *2d and 3d cervical vertebrae* by this method, the hart-beat can be greatly influenst. In fact all stimulation that can be given over the spine can be made by this method, and the results obtaind I hav not been able to arrive at by any other method. This method of using spinal stimulation is opening up an entirely new field, and it is worthy of an extended study. (See lecture on Spinal Reflexology.)

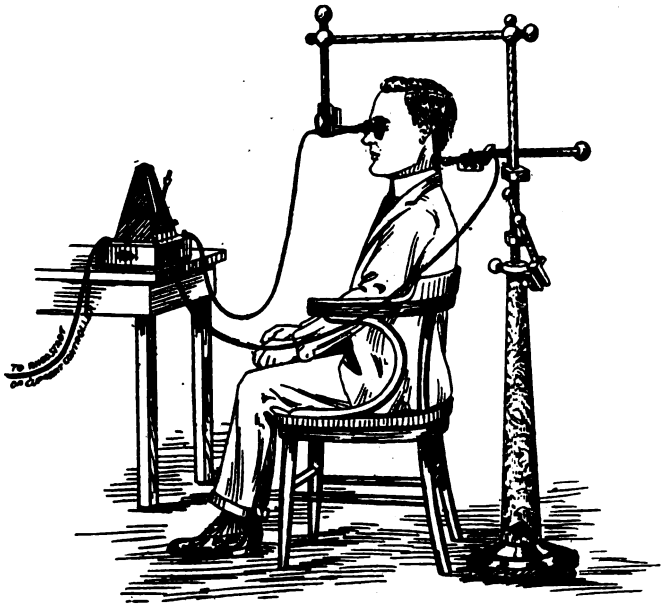


Fig. 254. Showing Valens Multiple Electrode Holder in use.

The simplicity of the device and the exactness of the method make the modality very practical. If the physician has an alternating current in his offis, all he needs is a current controller to be placed in series with this Metronomic Interrupter. If he has a direct current and has a transformer for making the rapid-sine current, that same current can be carried thru this Metronomic Interrupter. (The Universal-mode or Polysine Generator can do this.)

Spinal Electrode Holder

Fig. 252 shows a special x-ray tube holder bilt for me a good many years ago. It was described in the Journal of Advanced Therapeutics of March, 1910.

An ordinary x-ray-tube holder can be used for this purpose by having an extra clamp and rod put on it.

In these figures, *A* represents the ordinary wood-clamp rod.

B is an extra rod that can easily be put on by any good mecanic.

C is the friction ring which holds the adjustable upright at any height desired.

By using such an electrode holder, two different areas of the spine can be treated at one time without having the patient disrobe and while they ar sitting up.

Fig. 253 shows my latest Multiple Electrode Holder. It is made of oak and maple. Any expert wood worker can duplicate this electrode holder. Under the base is attacht a piece of iron or led to weight it down.

The lower two arms ar so jointed that they can be adjusted to any angle and raisd or lowerd on the upright rod.

The top, or extension rod, is especially designd for holding the binocular sponge electrode illustrated in Fig 228.

Fig. 254 shows this Multiple Electrode Holder in use. (For convenience, compare it with Fig. 252 in which the electrode is held by hand.)

The saving of time by having an electrode holder bilt on these lines is very great and it makes the work far more satisfactory than to hold the electrodes by hand.

THE PULSOIDAL CURRENT

Inasmuch as I use the rapid-sinusoidal current and interrupt this current at the rate of the *normal* puls, I hav named this current the *Pulsoidal Current.*

The term, Pulsoidal Current, therefore implies a rapid-sine current or an alternating current irregularly broken in cycles of four attacks to each respiration.

Insted of using four attacks to each cycle, two attacks can be made under certain conditions. This cyclic stimulation is grafically shown in Fig. 251.

Its Various Modes

Fig. 251 grafically shows how the alternating or rapid-sine current is broken up into modes when it passes thru this *Metronomic Interrupter.*

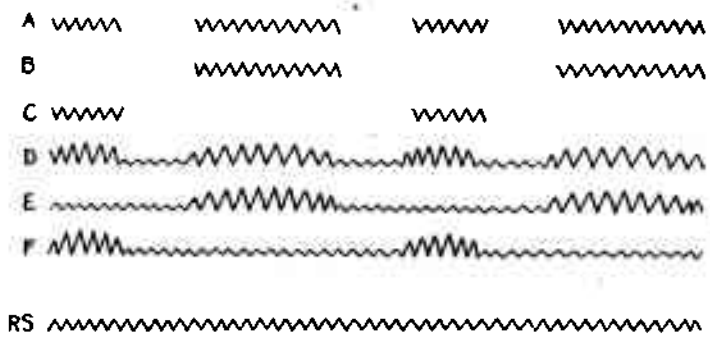


Fig. 251. Shows grafically the modes that can be gotten from the Valens Metronomic Interrupter. They ar described in the text. *RS* represents the rapid-sine wave current not interrupted.

Six distinct Modes can be gotten from the ALTERNATING current thru this instrument.

Mode A represents the current when both mercury dip-wels ar in operation. It wil be notist that the current is *unevenly broken.* This modality is generally used unless there is some special indication for using some of the other methods of breaking up the current.

Mode B represents the current when the mercury dip-wel *E* is off.

Mode C represents the current when the mercury dip-wel *D* is off.

Mode D represents the current when the condenser switch *S* is on and both mercury dip-wels ar in use.

Mode E represents the current when the condenser switch S is on and the mercury dip-wel *E* is off.

Mode F represents the current when the condenser switch *S* is on and the mercury dip-wel *D* is off.

RS represents the alternating current passing thru the instrument when the piece of tubing *T* holds one end of the walking-beam *G* in the mercury dip-wel, as shown in Fig. 246.

Six distinct Modes can be gotten from the DIRECT current thru this instrument.

Fig. 255. Showing the way a water-dish electrode is made to use with the Pulsoidal Current. The flexible metal is 2 inches wide by 12 inches long. The cord-tip connector is made by McIntosh Battery & Optical Co., Chicago.

The *galvanic* or *direct current* can be broken up thru the *Valens Metronomic Interrupter* as wel as the rapid-sine, or alternating current. One then gets an *interrupted galvanic* current, which is valuable in many conditions.

Pulsoidal Therapy Thru Water Dishes

Fig. 255 shows a metal electrode for use in dishes of water. This electrode any physician can make. Any flexible metal can be used. Zinc or aluminum ar very suitable.

Fig. 256 shows how these water-dish electrodes ar used in glass dishes of water. In this illustration both feet ar being treated. This modality used in this manner is very servisable in paralysis of the lower lims. It is also very useful in cases of paralysis or numness in the sacral region. The current has to pass thru the lumbo-sacral region to get from one foot to the other.

This modality is indicated in very many conditions indicating nerv or muscle derangement in the lower lims or feet, or lumbo-sacral region.

Fig. 257 shows how the same water-dish electrodes can be used in porcelain basins for treating the hands, arms, feet and lower lims at one time. One hand or both hands; one arm or both arms; or any combination can be used with such an arrangement. This is a most useful modality for very many forms of nerv and muscle derangements of upper or

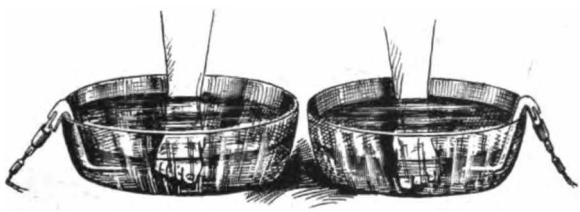


Fig. 256. Shows two water dishes of glass connected up with water-dish electrode for giving electrical treatment thru the two feet at one time. This tecnic is correct for the Pulsoidal Current or any other sine current. Galvanic current can also be used thru such dishes, if one fully understands galvanism.

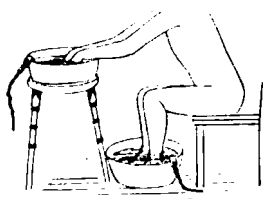


Fig. 257. Showing how two porcelain basins can be used to conduct an electrical current thru both feet and both hands at the same time. This is the tecnic for Pulsoidal Therapy thru feet and hands. Same can be used for one hand and one foot, etc.

lower lims. Even pains and numness in the shoulders can often be relievd quickly by putting one hand in one dish and the other in another and using the Pulsoidal or some other current thru them.

These illustrations wil giv the operator a suggestion as to very many ways of fitting up water dishes—glass or porcelain—for electro-therapeutic work.

The Pulsoidal Current Thru Nose and Mouth

In order that this lecture may be complete I am showing in Fig. 258 how the Pulsoidal Current can be used thru a specially made Post Nasal Electrode (illustrated and described in Part Six—Zone Therapy.)

This illustration wil giv the readers some idea of other ways of using the Pulsoidal Current than those that hav been described.

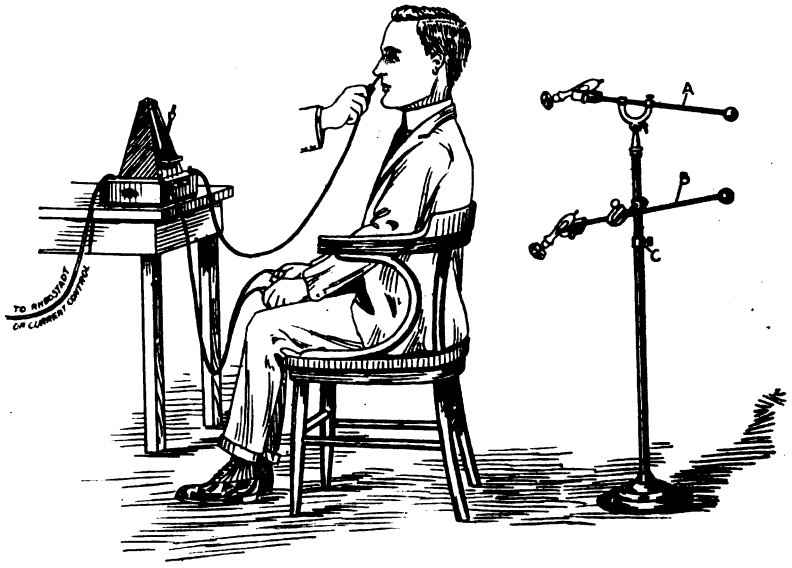


Fig. 258. Showing the tecnic for using the Pulsoidal Current, Mode A, thru my Unipolar Post Nasal Electrode. This illustration shows the patient holding two metal electrodes on a bifurcated cord. This is a Zone Therapeutic procedure, but the illustration is given here to make the lecture complete. Sponge electrodes can be used on the spine insted of the hand electrodes if so desired.

Fig. 259 shows the Pulsoidal Current being used thru my Tung Pressor Electrode while the indifferent electrode is placed over the 2d and 3d cervical vertebræ. This electrode and tecnic ar fully described in Part Six when speaking of electrical modalities in Zone Therapy.

This illustration wil giv my readers some idea of the wide scope to which the Pulsoidal Current can be put. Any kind of electrode can be used to giv stimulation wherever it is desired.

The Pulsoidal Current for Intermittent Light Treatment

Connect the feed-terminal *A*, Fig. 246, directly to the regular 110-volt street current. (It matters not whether it is alternating or direct.)

See that condenser-switch *S*, is down, that is, "On." Cut out the mercury dip-wel *E* by lifting the plunger-switch *E*.

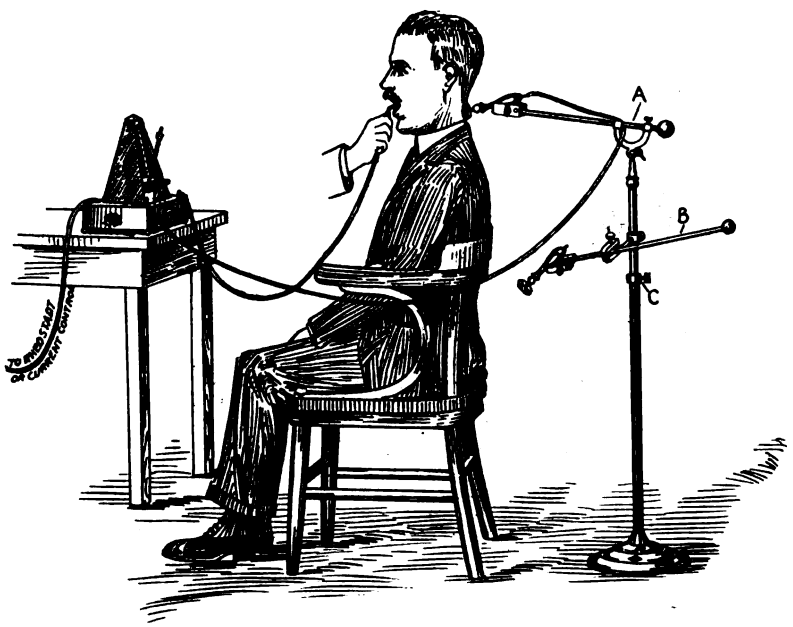


Fig. 259. Showing the Pulsoidal Current used thru my Tung Pressor Electrode. The indifferent electrode is placed over the 2d and 3d cervical vertebrae. Metal hand electrodes can be attacht to a bifurcated cord and used as shown in Fig. 258 if so desired.

Connect the Electric Bio-Dynamo-Chrome with the receptacle *B* after having set the switches in the Bio-Dynamo-Chrome for giving a stedy light.

The Valens Metronomic Interrupter is then redy for use.

In giving Bio-Dynamo-Chromatic Therapy, I find that if the light is intermitted too rapidly the VR does not hav time to act. By making these interruptions according to Mode B, the intermittence is just right.

Interruptions according to Mode C can be used, but interruptions according to Mode B ar better.

Caution: In using the 110-volt current directly thru Valens Metronomic Interrupter, be sure that the patient cords ar disconnected from the binding posts C, C.

PULSOIDAL THERAPY

ELECTRODES

Fig. 228 shows the Binocular Sponge Electrode that I designed for this purpose. Notis the free and wide nasal curv. Fig. 229 also shows a Binocular Sponge Electrode which has been perfected since I designed the one just mentiond. Both of these Binocular Sponge Electrodes ar appropriate for Binocular Electro-Therapy.

Fig. 253 shows my special multiple-electrode holder which I designed especially for this purpose. If a person so desires, they can hold the electrode over the eyes as shown in Fig. 252, but this is not nearly so satisfactory as having the electrode held over the eyes by some stationary holder.

It is quite easy for anyone with an x-ray-tube-holder stand to hav an arm made for holding this electrode over the eyes. Some use two electrode holders, one for holding the binocular sponge electrode and the other for holding the "indifferent" electrode.

The *indifferent electrode* can be a regular sponge electrode as shown in Fig. 222, or it can be two hand electrodes connected to a bifurcated cord, or if the patient is treated in a recumbent position, it can be the abdominal pad.

Some prefer to carry out the Binocular Electro-Therapeutic mesure with the patient lying on a table and the big light shining over the bare face and chest. This procedure is alright, but for the sake of convenience I prefer the method shown in Fig. 254. The reason why I prefer the sitting position is that it is more convenient to apply the electrode over the 2d and 3d cervical vertebræ.

Figs. 228 and 229 show the Binocular Sponge Electrodes, and Figs. 252 and 254 show the *Pulsoidal Current* being given thru the binocular sponge electrode, while the other sponge electrode is held in a stand and placed over the 2d and 3d cervical vertebræ.

In giving this binocular treatment, I use just enuf current to hav the patient comfortable.

Do not use too strong a current over the eyes.

I use this treatment for *blefarospasm, inequality of muscular tension,* general *ocular fatigue,* general *bodily stimulation* or *relaxation, "overwrought nervs,"* and for *regulating or normalizing the blood pressure.*

Fig. 227 shows my Rectal Dilator that I use with this *Pulsoidal Current.*

Fig. 224 shows my Bi-polar Rectal Electrode that I also use with this same modality.

Fig. 223 shows by Vaginal Electrode and Uterin Elevator that I use with this current.

Fig. 148 shows a patient being treated for cronic constipation by means of my Rectal Dilator. This same figure shows how treatment is given thru the vagina.

For all these uses of the *Pulsoidal Current,* I use the Mode A, grafically depicted in Fig. 251.

For reducing fat the *Pulsoidal Current* appears to be ideal. The clay electrode used for this purpose is shown in Fig. 212 and the sand pad that I use over the clay electrode is shown in Fig. 214.

For reducing fat, Mode A or Mode D can be used as strong as is comfortable. I find it is a good plan to giv five minutes of this treatment with Mode A and five minutes with Mode D.

Use sand pads as hevy as can be comfortably borne.

Treatment for the reduction of two or more areas can be carried on simultaneously.

The time for all these treatments with the *Metronomic Interrupter* is 10 minutes. I never giv longer than that unless it is for high-blood pressure.

Over-stimulation produces relaxation. Use a mild current.

I think it is safe to say that 5 minutes is enuf for treating anywhere thru the spine alone, but thru the rectum or vagina, the treatment can be given for 10 minutes .

For regulating blood pressure the treatment can be given for 15 minutes.

Generally speaking, in most cases where I heretofore used the slow-sinusoidal current, I now use the *Pulsoidal Current* as I find it givs more definit results and can be used in a more definit and scientific manner. It is not so much the

interrupting of the alternating current as it is the *mode* of use that produces the results.

The regulating of the pulsations of the current according to the "fysiologic cycle," that is four pulsations to each respiration, individualizes this method of treatment.

Under the hed of Zone Therapy the use of this *Pulsoidal Current* is discust along with special electrodes that I hav devized for Zone Therapeutic work.

Tecnic—Binocular Electro-Therapy

The current I use exclusivly for Binocular Electro-Therapy is the pulsoidal current, Mode *A*, Fig. 251.

I keep the sponges in a glass jar containing a wet towel and a little formaldehyde on it. This keeps the sponges always wet, which is a decided advantage in using any sponge electrode. Before using the sponges I rinse them off in clean water and sometimes moisten them with a saline solution. More often I use plain water from the tap.

With the eyes closed, I bring the binocular sponge electrode in close contact with the eyelids—directly over the ball of the eye. If anything, use a little upward pressure. The pressure should be upward and backward.

The other electrode I place over the 2d and 3d cervical vertebræ, as shown in Fig. 254 or over the 6th and 7th cervical vertebræ, depending upon just what condition I am treating.

The time of treatment, as a rule, should not be over 10 minutes, but in some conditions the time can be prolongd to 15 minutes.

Therapeutic Results

This treatment stabilizes blood pressure, either raising or lowering it. It also stabilizes faulty metabolism. The general relaxation produced by Binocular Therapy as abov outlined, placing the indifferent electrode over the 2d and 3d cervical vertebræ, is similar to most modern methods of auto-condensation. Altho I hav sercht books on spinal reflexes, I hav never found any allusion to the employment of the 2d and 3d cervical vertebræ for changing blood pressure or altering the metabolism. That area seems to hav been overlookt, altho I hav found it very important.

While using a binocular sponge electrode over the eyes, following out the tecnic of Dr. Coleman of Chicago, I began

experimenting with different areas of the spine for the indifferent electrode. I discoverd that I obtaind an entirely different result when placing this indifferent electrode over different vertebræ.

After observing what seemd to be remarkable results obtaind by some in manipulating the neck, I began a series of experiments to see just *why* certain results wer obtaind. By placing the indifferent electrode over the 2d and 3d cervical vertebræ, as illustrated, I found that I obtaind some results that I could not obtain from any other region. I also found that by *intermitting* the rapid-sine wave current, or alternating current, at a rate equal to four times the rate of the patient's respiration, I obtaind results that I never obtaind when using any other modality or when treating any other location along the spine.

I found the *blood pressure* could be lowerd or raisd, that is, stabilized or normalized, and that the patient had a feeling of wel being similar to what I had secured when treating the same patient with auto-condensation. I also found that if a patient came in complaining of feeling tired and "out of sorts," if I used the modality as here illustrated for about 10 minutes, they would feel greatly refresht. This was especially notisable if the treatment wer given in the afternoon or evening—when the patient would say after the treatment that he felt "like starting another day's work."

I also observd that if these patients wore glasses, their glasses did not fit for several minutes after the treatment. In many cases I observd that these same patients could get along without glasses after having a few of these treatments.

In speaking of the treatment of *goiter*, it wil be notist that I mention that the indifferent electrode is placed over the 6th and 7th cervical vertebræ. Clinical experience has proved that this is the best location.

High Blood Pressure Tecnic

My tecnic for treating high blood pressure according to this method is to place the binocular sponge electrode over the eyes and the other electrode over the 2d and 3d cervical vertebræ, as shown in Fig. 254, using the pulsoidal current, Mode A, Fig. 251, and giv a current of just comfortable strength, treatments lasting 10 to 15 minutes daily.

If the Pulsoidal Current cannot be used thru the Metronomic Interrupter, use a hand interrupter. (Fig. 221.)

Fig. 259 illustrates another method of rectifying blood pressure.

Goiter Tecnic

The tecnic for treating goiter by this method is to place the binocular sponge electrode as abov mentiond, but the indifferent electrode should be placed over the 6th and 7th cervical vertebræ.

Fig. 258 shows another method of treating goiter.

Indications

The indications for this Binocular Electro-Therapeutic procedure ar very wide. Good results can be obtaind by using this method for any condition of *high or low blood pressure.*

For *albuminura* use the same tecnic as for high blood pressure.

For *glycosuria* use the same tecnic as for goiter one day and the next day the same as for high blood pressure.

For *impotency* use the same tecnic as for high blood pressure.

For *incipient cataract, high intraocular pressure* or other *eye conditions,* use the same tecnic as for high blood pressure.

When the physician once becomes accustomd to the action of this modality, he wil find many other conditions in which it is applicable.

An Explanation of this Fenomenon

The explanation of the effect of this modality upon the eyes is quite simple. It tones up the musculature of the eyes and relievs a certain strain that the eyes hav been under. By relieving this strain we ar giving to the rest of the body much of the energy that has been exhausted by the eyes. Some writers claim that one-sixth of the energy of the brain is consumd thru the optic nerv, and if this is the case, we can redily see why relieving of the tension and exhaustiv strain of the optic nerv from this stimulation is so productiv of good.

The explanation for the lowering of an abnormally high blood pressure or raising an abnormally low blood

pressure, is not quite so easy, but from my observations I think it is thru the *pituitary body*. Stimulating the 2d and 3d cervical vertebræ seems to hav a selectiv action upon the internal secretions (hormones), and I cannot explain it in any other way unless it is thru this gland at the base of the brain.

According to anatomies, there ar branches of the sympathetic nerv connected with the pituitary body. These branches ar distributed in the region of the 2d and 3d cervical vertebræ. According to the hormone theory of Starling, if we influence the hormone in any one of the internal secreting organs, we influence the hormone in *all* of the internal secreting organs. Sejous, in his work on internal secretions, goes into the influence of one internal secretion upon another very extensivly, but the "hormone theory" seems to elucidate a great deal of Sejous' original work.

CLINICAL REPORTS—
PULSOIDAL THERAPY—
MODE A

Case 209

Mrs A. 38 years of age. Lower half of uterus amputated about two years ago, after which she developt a goiter with tacycardia. When she came to my offis about six months after the operation, her puls was very soft and going at the rate of 120 to 130 a minute. I let her rest in a quiet room for about half an hour, and took the puls again. Found it was 120 to 125.

I attacht the bifurcated cord to metal electrodes and she graspt these in her hands (Fig. 258). The other pole was placed to a tung depressor (Fig. 259). Strong traction was put on the tung and a gentle current given, the Interrupter being set at 110. After three minutes the puls was counted and it was 110. I then set the speed of the Interrupter at 110 and repeated the maneuver for five minutes, after which the puls was 100.

The next day she came for treatment. The puls was 110 and I set the Interrupter at 100 and gave treatment as before. Within five minutes the puls was 96.

These treatments wer continued one month, after which the thyroid enlargement had gone down more than

one-half and the puls has remaind at 96. Right after the treatment it was about 88. It is now over a year since her last treatment and she is wel.

Case 210

A man 45 years of age came into my offis one evening for examination. His respiration was 18 and puls 60. He graspt the two hand electrodes which wer attacht to the bifurcated cord which went to one side of the Metronomic Interrupter. The other was placed to a sponge electrode and put over the 2d and 3d cervical vertebræ. The Interrupter was set at 72, and within 10 minutes his puls was 72.

Case 211

A lady 30 years of age was sent to me for examination. I found she had incipient tuberculosis with some reflex involvment of the thyroid. She coft a good deal in the morning, and her puls was 130 with her respiration about 20. I placed the two hand electrodes from the bifurcated cord in her hands and put the other electrode, which was a wet sponge, at the 2d and 3d cervical vertebræ. I gave the current as strong as she could take it with the Interrupter set at 110. Within 10 minutes the puls was 110.

I then set it at 100 and gave treatment for 5 minutes when the puls was 100.

Two days after this lady came for another treatment and her puls was 110. I placed the hand electrodes as before and put the sponge electrode over the 3d and 4th *thoracic* vertebræ, setting the Interrupter at 100. After 5 minutes the puls was 115, which was 5 more than when she started the treatment. I then changed the sponge electrode to the 2d and 3d *cervical* vertebræ and within 5 minutes the puls was down to 90.

The next day I gave the same treatment, placing the sponge electrode over the 6th and 7th cervical. There was no change in the puls. I then placed it at the 2d and 3d cervical and within 10 minutes the puls was at 90.

After six treatments this lady's cof had nearly disappeard and her puls continued at about 88 and respirations about 20.

Case 212

A lady about 40 years of age. Respiration 18 and puls 60. I placed the hand electrodes as in previous cases and

with the sponge electrode over the 2d and 3d cervical vertebræ, made interruptions at 72. Within twelv minutes her puls was 72.

Case 213

A man about 30 years of age with puls of 60 and respiration 18. I put the hand electrodes as before stated and the sponge electrode over the 2d and 3d cervical. I set the speed of the Interrupter at what I thot was 72. After 10 minutes there was no change and I found I had the metronomic pendulum at 88 insted of 72. I changed the pendulum to 72 and within 10 minutes the puls was 70.

Case 214

Mrs. G. 30 years of age. Very nervous. Rapid puls and unstedy respiration. I put the hand electrodes as abov described and the other electrode was the binocular sponge electrode over the eyes. I set the speed at four times her average respiration, which was 18, and gave the current as strong as she could stand it for 10 minutes, after which time her respiration was stedy and her hart-beat 72. She remarkt that she had not felt so rested in ten weeks.

After giving this treatment three or four consecutiv days, she reported that bromids or nothing else had ever had the quieting effect that the treatment had.

Case 215

Man 70 years of age. Respiration 15. Hart beat 72. I placed the two metal electrodes, attacht to the bifurcated cord, in his hands and the sponge electrode over the 2d and 3d cervical vertebræ. The speed of the Interrupter was set at 60, which was four times that of his respiration. Within 10 minutes his hart beat was 60. Altho I later set the Interrupter at 50 to see if the puls would go down to 50, I found it would not. It would go to 60 and no lower.

Case 216

Lady 38 years of age. Respiration 16. Puls 72. Placed the sponge electrode over the 2d and 3d cervical vertebræ and the bifurcated-cord, metal electrodes in the hands. Set the Metronomic Interrupter at 72, which was the same as

her hart-beat. After 10 minutes counted the puls and it was 72. Left the electrodes as they wer, set the pendulum at 64, and after four minutes counted the puls and found it 72—no change, "because its normal rythm was alredy establisht."

Case 217

A lady 26 years old had sufferd from painful menstruation for thirteen years. She had taken "barrels of medicins" she told me and none helpt her. My Pulsoidal Current and 3,000-candle-power lamp cured her within three months and she has been wel for over three years.

J. H. Long, M.D., East Moline, Ill., reports:

Case 218

Child 13 months old had markt strabismus following spinal meningitis. Used the Pulsoidal Current and sometimes the slow-sine current over temples and cervical spines 3 minutes, followd by concussion of 7th cervical vertebra for 3 minutes, every three days for one month. This one month's treatment effected a cure and the eyes became normal and ar now normal.

SUMMARY OF CLINICAL FINDINGS

I find that energy given rythmically four times as fast as the respiration (the fysiologic rythm) seems to set the pace for the hart rythm and produces beneficial results that ar startling.

The hart responds to the rythm of four times that of the respiration more redily than to any other meter.

It seems that after the rate of the puls has gotten to four times that of the respiration, it wil stay there and one cannot make it more or less by changing the meter of the make and break.

If a person is tired and languid, I find their hart beat is not in proportion of four-to-one with the respiration. By bringing the rate of the hart to that ratio, the patient feels rested and expresses a feeling of general wel-being—euforia.

To set the pace for the hart, too great a jump cannot be made between times. It must be made by steps.

I find that one can stedy the hart more by putting the electrode over the 2d and 3d cervical and the other over the eyes than in any other way. I also find that by putting the

binocular-sponge electrode over the eyes, it has a more sedativ effect and controls the blood pressure better than any modality that I hav ever used; and I hav used every modality that I know anything about. *I find that the results ar as permanent as by any other method.* The modality is very easy to handle, and parafernalia is not very expensiv. The apparatus can be taken to the house and treatment given wherever there is an alternating current or, if one has a portable transformer, treatment can be given in any house where there is a direct current.

The treatment can be given while the patient is sitting in a chair or lying on a table. It does not conflict with any other treatment.

ERGOTHERAPY

Ergotherapy is made up of two Greek words meaning *work and treatment.* Therefore the literal meaning of the word is *treatment of disease by fysical effort.* As so much is now being said regarding this treatment under the names of various investigators, I shal briefly mention it.

The term, ergotherapy, according to the definition, covers a very broad field; but the limited sense in which it is being used covers only exercizing of muscles, following out a certain tecnic in the employment of the faradic or sinusoidal current.

The method employing the interrupted, faradic current I do not like, because of the unplesant sensations given by that modality. The sinusoidal currents, when carried to clay pads over which ar placed sand bags weighing from ten to twenty-five pounds, seems to be very effectual in *reducing fat* as wel as *exercizing muscles.*

There ar several large apparatuses made for this purpose. Before buying such an apparatus, I would advize anyone to look wel into the merits of each, before putting the required amount of money into it. Some hav many drawbacks, while others ar simple and efficient.

If you hav a good sinusoidal apparatus, you can use this form of ergotherapy, until you become accustomd to it, before investing in an elaborate outfit. My plan is to use clay pads, placing over them a bag of convenient size fild with sand (Fig. 214). This bag should be coverd by some waterproof material. The weight of this sand bag (Fig. 148) over the electrode causes the contractions of the muscles to be very great, and I advize the use of such a sand bag as much as possible for any condition where we wish to exercize the abdominal muscles, as in pelvic diseases and constipation.

For *reducing the brests,* I place the clay pad over each, and over that the sand bag, and giv the slow-sinusoidal current, or an interrupted, rapid-sinusoidal current, for 10 minutes daily. *Fat on any part of the body can be reduced in like manner.*

The current I use for reducing fat is the *Pulsoidal Current,* Mode A, or Mode D.

Probably Mode D reduces the fat faster than the other modalities. It might be wel to use Mode A 5 minutes and then use Mode D 5 minutes, at a séance. I find this current

reduces flesh and promotes elimination as wel as an interrupted faradic current without the disagreeable sensations that one generally gets from the induced current.

For strengthening the muscles, reducing fat, creating intestinal peristalsis, and in fact for any Ergotherapeutic work, I do not know of any procedure that can compare with this.

PART FOUR. LECTURE VIII.

SPINAL REFLEXOLOGY

or

Elicitation of the Sympathetic-Vagal Reflexes thru Stimulation of the Spinal Nervs

Before beginning the discussion of Spinal Reflexology or Spinal Therapeutics, I wish to digress a little and say a few words regarding the nomenclature used by many writers when writing and re-writing about spinal work.

NAMES—OLD VS. NEW

Anatomy is from two words meaning *to cut apart.* (Suppose every author of a work on anatomy gave it a new term, using Latin or some other language as a basis.)

Therapy is from a Greek word meaning *treatment,* or *treatment of Disease.*

Reflex is from a Latin word meaning *reflected,* or *a reflected action or movement.*

Reflexology is defind as *the science,* or *study of reflexes.*

Spine is from a Latin word meaning a *slender process,* or, in anatomy, the *vertebral colum.*

Spinal is the adjectiv from the same Latin root and is defined as *pertaining to the spinal colum.*

Writers on Anatomy hav, in most instances, adhered to that name. Unfortunately, writers on therapeutics, spinal therapeutics, reflexes and spinal reflexology, hav coind all sorts of names to individualize the author's name. Original names, as a rule, cannot be improved upon.

From time immemorial spinal therapeutics and reflexology hav been practist. This author and that author claims he first discoverd this or that reflex, and puts his name to it. Is this scientific? If we carefully peruse old records and observ the work of comparativly natural man, we shal see that there is very little "new under the sun."

Why should one scool in medicin antagonize another by using *coind* names, insted of having recognized, scientific terms? If the subject or device has no recognized name, then we should coin a name that is scientific, that is, having roots of a definit significance.

SPINAL THERAPEUTICS, SPINAL THERAPY, SPINAL REFLEXES, SPINAL REFLEXOLOGY, REFLEXOTHERAPY, OR REFLEX THERAPY, ar all terms that hav a recognized meaning and cannot offend broad-minded physicians. Why should we not employ such terms rather than the coind names meaning the same thing?

Every practitioner of the healing art employs reflexes of some kind. Most of them use spinal therapeutics, spinal reflexes, or reflex therapy in some way, whether they know it or not.

SPINAL THERAPEUTICS

That Spinal Therapeutics is based on the stimulation of the sympathetic ganglia is the consensus of opinion.

It has been proved beyond all speculation that spasmodic contraction of the spinal muscles irritates branches of the spinal nervs and thereby affects the sympathetic system. Whether it is possible for the bony parts to impinge upon these spinal nervs, I do not know. Reserch work seems to show that this does not take place except in rare cases, and then only from caries or severe external injury.

I think that many of the so-cald "misplaced vertebræ" ar not misplaced, but hav that appearance, owing to natural bony conditions or spasmodic contraction of muscles causd by irritation (referd or direct) of periferal nervs.

Altho these ar mooted questions, yet no intelligent or observing physician can dispute the fact, that many obscure conditions can be cured by means of the spinal reflexes, that cannot be cured in any other way.

Spinal manipulation for the cure of disease, or relief of pain, has been practist for centuries. Some hav produced results that hav been little less than marvelous.

Various coind names hav been given to this method of treatment. There has been no need of this as the old names, that every one knows and understands, would hav anserd far better.

Spinal Reflexes hav been elicited in all sorts of ways. Among them ar pounding certain areas of the spine—sudden hammer blows (concussion); tredding on the spine; bending and twisting the spine; stedy pressure on the spine; stretching of the spine; alternate compression and stretching of the spine; prodding of the spine by various devices; sudden thrusts against the spine with various instruments; vibration of the spine; electrical modalities, especially the sine-wave current, on the spine, etc.

When properly applied at the correct area, good results hav been obtaind by almost all the methods, crude tho they may hav seemd. Very bad results hav also been obtaind thru ignorance and the use of too much force.

Errors hav been made in every branch of therapeutics, but that is no reason why the whole system of therapeutics should be discarded.

Every physician should understand about spinal therapeutics and spinal reflexes. It is his duty to keep informd on

all therapeutic methods as far as possible, so his patients may be relieved in every possible manner.

Perhaps the oldest method of producing the reflexes thru the spine is that of *Concussion,* altho it was not used under that name. Pounding of certain areas of the spine has been used for hundreds of years for producing certain reflexes. A later modification of this has been *Vibration,* and stil later *electricity* in the form of the sine-wave current.

All workers in spinal therapeutics hav observd that stimulation of the 10th and 11th thoracic vertebræ wil produce anemia of the brain. Congestion of the brain is quickly relievd by such stimulation. Some forms of insanity ar quickly relievd and at times permanently cured by such stimulation.

The anatomies tel us that the small splancnic nerv comes from the 10th and 11th ganglia, passes with the great splancnic nerv, and ends in the solar plexus.

I hav had an opportunity to verify this in a very simple manner. Among a great many individuals upon whom I was testing out the spinal reflexes, was a lady with a very much deformd abdomen. The deformity did not show until her trunk was exposed, when a markt depression was observd just below the diafram. Upon a careful examination I found that the pancreas, stomac, and in fact all the viscera, wer much lower than normal, and that it was a congenital condition. I at once palpated for the celiac axis and solar plexus. When I thot this location was found, I began to gently rotate the finger with a stedy pressure. At once the subject felt faint and within a minute she was lying on the floor in a faint. As soon as she revived, I tried the maneuver again and with the same result. The patient said she had never fainted before, but that her hed began to "swim" as soon as I prest and manipulated over that particular area. No symptoms wer observd when other regions wer manipulated. My conclusions wer that the stimulation to the solar plexus had causd anemia of the brain and consequent syncope .

A sudden, severe blow in that region givs what is popularly known as a "knock-out blow."

This seems to show how one can produce anemia of the brain by *prolongd* stimulation of the 10th and 11th thoracic vertebræ, thus causing a relaxation of the splancnic vessels.

Investigators hav observd that while the abdomen was opend and a moderately large electrode placed over the 1st and 3d lumbar vertebræ, while the indifferent electrode was over the sacrum, with sixty to seventy volts of the slow-sine current, the stomac would contract to about one-half or one-third its original volume. These experiments hav been often repeated and hav proved that intermittent stimulation over the 1st and 3d lumbar vertebræ contracts the stomac and intestines, and is therefore indicated for dilated stomac or dyspepsia due to motor insufficiency.

By various methods I hav proved that the slow-sinusoidal current, or concussion, over the 2d lumbar vertebra wil contract the uterus. In a like manner I hav demonstrated and proved that the same stimulation over the 11th thoracic wil dilate the uterus.

By putting one electrode over the 11th thoracic vertebra and one over the 2d lumbar vertebra, and then passing the slow-sine wave thru them, the uterus can be seen to contract and dilate. This is an indirect method of stimulating the muscles of the uterus and its appendages.

Stimulation of the lower thoracic vertebræ, notably the 7th and 8th, wil contract the splancnic vessels, thereby changing an anemic condition of the brain to a hyperemic condition. On the other hand, relaxation, which is brot about by a *prolongd* stimulation of the same area, wil dilate the splancnic vessels and change a hyperemic condition of the brain into an anemic condition.

Generally speaking, the upper five thoracic vertebræ, when stimulated, dilate the splancnic area; while stimulation of the lower seven thoracic vertebræ contract the splancnic area.

Remember that prolongd stimulation produces relaxation.

Remember that the rapid-sinusoidal current when not interrupted produces relaxation.

THE PULSOIDAL CURRENT IN SPINAL THERAPEUTICS

The interrupted rapid-sine current is one of the best modalities for producing spinal stimulation.

The *Pulsoidal Current* is no doubt the best form of interrupted rapid-sine current to use for this work. The interruptions can be made by a hand interrupter at the rate of four times to the respiration, or a Metronomic Interrupter can be used (Fig. 246).

Figs. 252 and 254 show multiple electrode holders that can be used for holding one or two sponge electrodes for use with the Pulsoidal Current. The lower sponge electrode should be used over the sacrum and the upper one over any area of the spine to be stimulated.

When stimulating two areas of the spine, one must take into consideration just what they want to do and not use one area that wil neutralize another. For example, stimulation of the 11th thoracic vertebra dilates the uterus while stimulation of the 2d lumbar contracts it. Therefore they cannot be used together. Stimulation of the 5th thoracic vertebra dilates the pyloric end of the stomac while stimulation of the 2d lumbar contracts it. Therefore it would be irrational to stimulate both of these areas at one time.

As a rule it is best to use the indifferent electrode on the sacrum and use the other over the indicated area; or one can use hand electrodes by means of a bifurcated cord for the indifferent terminal, and the indicated area on the spine for the other.

CONCUSSION VS. VIBRATION IN SPINAL THERAPEUTICS

Probably pounding or prodding of the spine is used more than any other method for eliciting the reflexes because it seems to be the most natural and has probably been used the longest. In fact, no one knows when sudden thrusts of the spine wer first used for producing reflexes thru the spine, and altho this work was formerly done in a very crude manner, yet very good results wer obtaind.

In recent years "concussion" is the name under which prodding or sudden hammer blows on the spine is known. For years I hav used this method because I did not know of any better one, altho I hav used vibration a great deal to produce the same results. If the proper tecnic is employd, probably vibration can be used in lieu of concussion, but it is not as efficient a method in the hands of one not thoroly traind in the art of vibration.

It is hard to speak of concussion without at the same time speaking of vibration. I now use concussion in spinal therapeutics where I formerly used vibration, for the reason that I hav found concussion to be the better modality.

I think that Reich (in the "Lexikon der Physikalishen Therapie Dietetic und Krankenflege") made the first distinction between concussion and vibration. He differentiates them as we do electric currents, comparing vibrations to a high frequency current and concussion to a current of less frequency but stronger. He classifies concussion as a change of movement from 120 to 150 a minute. In vibration he mentions that the body has no time to come back to rest before the succeding strokes, while with concussion the muscles do hav time to come to rest before the succeding stroke.

In spinal therapeutics it is of the greatest importance to differentiate between concussion and vibration. It is no longer a matter of doubt that the elicitation of the sympathetic-vagal reflex is of the greatest importance in the treatment of many *diseases*. I do not believe that the average person can secure the same results with a vibrator as they can with a concussor, altho some expert operators claim that they can.

As there ar so many different styles of vibrators on the market and so many different conceptions of the use of a

vibrator, I cannot go deeply into this subject. The vibrator that I use is illustrated in Fig. 203.*

For exciting the spinal reflexes as wel as some of the tendon reflexes (such as the patellar), concussion (hevy percussion) is doubtless better than vibration.

Concussion means a sudden hammer stroke. This stroke should be so timed that the stimulated part can come back to a state of rest before the succeding stroke is given. For this work a slow, hammer stroke is cald for. The stroke should be stedy and strong and under the control of the operator. Concussion is easily applied and quickly masterd if one has the proper device and understands the underlying principles.

The Concussode

When giving concussion one must use an applicator (concussode) that does not slip about on the skin. Otherwise there wil be an abrasion. The concussode should hav rounded parts to come in contact with *both* sides of the spinous process. Experience proves that a flat applicator, that comes in contact with the spinous processes, does not hav as good an effect as an applicator which givs equal pressure on each side of the spinous process.

Many physicians hav given up spinal concussion because of the soreness, or abrasion, of the skin following the treatments. In every such instance I hav found that they hav used a rubber-coverd applicator, and that it was placed over the spinous processes.

Another disadvantage of the rubber-coverd concussode is the fact that it cannot be sterilized. I hav seen some very bad sores on the spine, causd by carrying an infection from one patient to another. For this reason I must caution all users of rubber applicators which come in contact with the skin. I hav found that aluminum makes the best concussode. The form of concussode that I hav found to be the best is shown in Fig. 260.*

*If any wish to go thoroly into vibration, I would advize reading Dr. Mary Arnold Snow's latest book on Mechanical Vibration.

*I hav devized and bilt many different apparatuses for spinal stimulation. Altho they ar as good as anything made for that purpose, yet they wil not giv results that I wish, and in many instances the method is very distasteful to the patient. My latest device, however, appears to be ideal. It is illustrated in Fig. 260.

The Application of Concussion

There ar two methods of giving spinal concussion. One is by a slow, hammer stroke, striking the concussode about forty to sixty times a minute. Another is to giv four or five strokes in rapid succession and then hav an intermission of an equal length of time as it takes to giv the strokes. Experience seems to prove that the slow method is the better.

Fig. 260. Valens Spinal Concussor. Concussode is of polisht aluminum. Ends of mallet ar of best rubber gum. Wood is polisht rosewood. Elegant thruout and as practical as it is elegant.

No matter which method of concussion one uses, he must remember that *slow, intermitted strokes produce excitation; while prolongd, rapid strokes produce relaxation.* When stimulation is desired in any muscle or set of muscles,

never forget that the muscles must come back to rest before the succeding stroke is given.

It is a mistaken idea with many operators that concussion means a sledge-hammer blow. The only force needed for the blow in concussion is that necessary to elicit the desired reflex. It is not so much the *force* of the blow as the *kind* of blow that is effectiv. The stroke must be *sudden.* It is because of the *kind* of stroke that is required for successful concussion treatment that so many operators hav faild to obtain the results they anticipated.

I do not believe that any vibrating apparatus can be as successfully used for concussion, when stimulation is required, as the device shown in Fig. 260. Vibration can be used to exhaust a reflex or to produce sedation.

Whether concussion or any other form of energy is used, always bear the following axioms in mind:

Quick, firm blows or contractions cause stimulation. Prolongd stimulation produces sedation. *Stimulating energy must be intermittent* and not too prolongd.

Vibration or concussion should be practist only when there is an accurate knowledge of the anatomy of the part we wish to treat, and a ful understanding of the effect of the modality. Know the action of the modality you ar using, and use discretion in your work.

Do not overdo any form of treatment.

Magnetic Energy with Concussion

In some of my former writings on Magnetism I hav mentiond the fact that energy from a magnet would elicit a spinal reflex. I also advocated the use of magnetism along with concussion or vibration. Because so many hav misused the information I gave and hav used magnets in the rooms used for Bio-Dynamo-Chromatic diagnosis, I hav ceast advocating the combind method. I find from practical work and from reports from my many pupils, that concussion, if wel applied, does not require magnetism with it.

A Simple Spinal Concussor

As I could find no form of concussode or concussion device to meet my requirements, I devized the Valens Spinal Concussor shown in Fig. 260. It is a very neat and compact

device, consisting of a concussode and hammer of an improved style, which meet all requirements for successful spinal-concussion work. The concussode is made of polisht aluminum and therefore can be kept in a sanitary condition by wiping it off with alcohol after each treatment. This makes it far preferable to any rubber-coverd concussode.

The shape of the concussode is such that it wil project over the spinous processes, and the stimulation can be given simultaneously to each side of the selected vertebra.

This concussode is ferruld and securely screwd into a finely finisht wooden handle. It can be held in an exact position in contact with the skin without any danger of abrading the skin during the treatment (Fig. 261).

The mallet or hammer that is used with the Valens Spinal Concussor is of beautifully finisht wood and of the required weight to do successful work. In each end of the

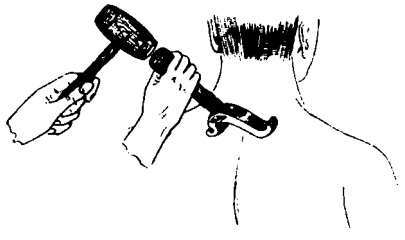


Fig. 261 Showing method of using Valens Spinal Concussor. The Concussode must be firmly prest against the spine. A staccato stroke must be given.

mallet is countersunk a gum-rubber contact piece so that there is scarcely any noise while giving the treatment, which is very desirable with some patients. After this rubber is worn out, it is very easily replaced.

Tecnic—Spinal Concussion

In using this concussor, find out from the appended "Key to Spinal Stimulation," just what region you wish to stimulate. Place the concussode over that area, hold the handle at exactly right angles to the body. In that way the flat surface of the concussode is in contact with the skin. Hit the handle with a decided, stedy blow but not too hard. Make these strokes with the mallet at the rate of four times

the respiration of the patient. This treatment should consume about 2 minutes when treating for stimulation. (Fig. 261).

If treating for relaxation in any area, make the strokes as rapid as possible for from half a minute to a minute without stopping.

With a very fleshy person the blow must be struck with more force than with a thin, delicate person. A little practis wil teach the operator what force to use in giving these strokes. Never strike hard enuf to hurt the patient.

KEY TO THE THERAPEUTIC APPLICATION OF SPINAL STIMULATION.*

The following Key to the Therapeutic Application of Spinal Stimulation can be used for the *Pulsoidal Current* or the *slow* Sinusoidal Current, if one electrode is placed over the vertebra named and the other over some indifferent part such as in the hands, over the sacrum, or over the abdomen.

This Key can also be used for Concussion.

The double-prongd spinal concussode should be placed over the spinous process of the vertebra named or between the vertebræ if so indicated, and concussion given according to directions set forth. This produces the reflex named, and is indicated as specified.

Remember that prolongd stimulation produces relaxation.

Remember that the rapid-sinusoidal current not interrupted produces relaxation.

Remember that the blood supply to any joint or adjacent tissue is in direct ratio to the flexibility and activity of that joint.

When giving treatment, always know whether you wish to bring about relaxation or contraction.

Do not overdo these treatments.

The secret of success or failure in Spinal Reflexology is to a great extent in the manner of producing the reflexes.

2D AND 3D CERVICAL

Indicated in *Diseases of Eye, Ear, Nose and Throat, and High Blood Pressure.*

4TH AND 5TH CERVICAL

Lung reflex of contraction.
Indicated in *Bronchial Asthma, Emfysema, Hiccof.*

4TH TO 7TH CERVICAL

Indicated in *Numness of Arms, Brachial Neuroses.*

6TH AND 7TH CERVICAL

Hart reflex of contraction. Increases Vagal Tone. Reduces Blood Pressure if due to cardiac weakness. Diminishes

*Dr. I. W. Long, Columbus, Ohio, publisht the first "Key" to Spinal Stimulation that I ever read. This is modified from his and new data added and changes made as fast as I was sure of my ground.

symptoms of Hyperthyroidism. Inhibits Puls temporarily. Contracts Viscera. Relieves Asthenopia if due to low intraocular tension.

Indicated in *Cardiac Asthma, Tachycardia, Palpitation, Arythmia, Goiter (simple and exofthalmic), Aneurism, Angina Pectoris with dilation, Diabetes Mellitus, Bright's Disease, Coryza, Chilblain, Hay Fever, Cold extremities, Dyspnea, Acute congestion of Bronchial Mucosa, Hemoptysis, Epistaxis, Migraine, Congestion of Eye, Ear, Nose, and Lungs, Pertussis, Vaso-Dilator Neuroses, Amblyopia, Digestion Auto-Intoxication, Nervous Defness.*

1ST AND 2D THORACIC

General hart stimulation, but not as markt as at 6th and 7th cervical.

3D THORACIC

Contracts Pylorus and Dilates Cardia.

BETWEEN 3D AND 4TH THORACIC

Dilates Periferal Vessels. Increases Mammary Secretion. Dilates Esofagus. Develops busts.

Diminishes Vagal Tone and depresses functions of structures innervated by the Vagus. Dilates Hart. Reduces High Blood-Pressure. Inhibits Hart Action. Relievs Asthenopia if due to high intraocular tension. Relievs Abdominal Pain during menstruation.

Indicated in *some forms of Emfysema, Cardio-spasm, Atrofy of Mammary Glands, High Blood Pressure, Hyperemia of Brain.*

4TH THORACIC

Contracts the Gall Bladder and Pancreas. Increases Pancreatic Secretion.

Indicated in *Catarral Jaundis, Hepatic Fever associated with Colelithiasis, Infectious Colecystitis.*

5TH THORACIC

Dilates Pylorus and Contracts Cardia. Facilitates rapid Gastric Absorption and Elimination. Aids in Gastric Skiagrafy.

Indicated in *Sick Hedake and conditions requiring rapid evacuation of stomac.*

6TH AND 7TH THORACIC

Dilates Kidneys.
Indicated in *Interstitial Nefritis, Seudo-Appendicitis.*

7TH AND 8TH THORACIC

Constricts Splancnic Blood Supply. Dilates Lungs.
Indicated in *Splancnic Neurasthenia with Hypotension, Enteroptosis, Atelectasis, Anemia of Brain.*

9TH THORACIC

Dilates Gall Bladder.
Indicated in *Biliary or Hepatic Colic.*

10TH THORACIC

Dilates Pancreas and increases Pancreatic Secretion. Produces Hyperemia by dilating Blood Vessels. Reduces Blood Pressure. Increases Red Blood Corpuscles. Dilates Kidneys. Stimulates Renal Activity. Relievs pain in Duodenal Ulcer.

Indicated in *Locomotor Ataxia, Nefritis, Tisis, Mitral Stenosis, Senile Hart, Anemia, Ovarian Neuralgia, High Blood Pressure.*

11TH THORACIC

Dilates Hart, Stomac, Liver, Spleen, Abdominal Arteries, Intestins, Ureters, Uterus, Cervix Uteri, Gall Bladder, Bowels, Thoracic Aorta. Increases Blood Supply to Lungs. Changes Anemia into Hperemia. Increases Red Blood Corpuscles and Hemoglobin. Relieves Rigid Os.

Indicated in *Spastic Constipation, Nervous Diarrea, Peristaltic Unrest, Enteralgia, Contracted Os. Anginoid Pains, Angina Pectoris, Congestion of Brain.*

12TH THORACIC

Contracts Kidneys. Relieves Backake due to distension of Kidneys. Intensifies pain of Renal Calculus. Contracts Prostate. Aids Replacing a Movable or Prolapst Kidney.

Indicated in *Parenchymatous Nefritis, Prostatic Hypertrofy, Nefroptosis, Nefrospasis, Urethritis, Constipation.*

NOTE—Upper five thoracic vertebrae, when stimulated, dilate or relax the splancnic area.

1ST TO 3D LUMBAR

Contracts Stomac, Intestins, Liver, Spleen, Uterus. Increases Leukocytosis (See Fig. 263).

Indicated in *Dilated Stomac, Dyspepsia due to motor insufficiency, Hepatic Congestion, Atonic Constipation, Enlarged Spleen, Uterin Subinvolution, Uterin Hemorrage, Dysmenorrea, Amenorrea, Splancnic Neurasthenia, Intestinal Auto-Intoxication, Malaria, Leukemia.*

3D LUMBAR

Stimulates Ovaries.

5TH LUMBAR

Contracts Bladder.

Indicated in *Enuresis, Irritable Bladder, Prolapst Bladder.*

NOTE—The seven lower thoracic vertebrae, when stimulated, contract the splancnic area.

Hyper-Extension of Thighs in Spinal Stimulation

Fig. 263 illustrates the tecnic for hyper-extension of the thighs to produce stimulation of the 2d and 3d lumbar vertebræ. This stimulation is indicated in very many conditions. This stimulation contracts the Stomac, Intestins, Liver, Spleen, Uterus, etc. Its wide field of therapeutic value can at once be seen. For amenorrea and dysmenorrea this stimulation is of great importance. The only *caution* note I hav to sound in this respect is to be sure that you do not use this tecnic on a woman who is pregnant. I did not realize what powerful stimulation this tecnic produced to the uterus til two of my patients reported an abortion a few days after giving them this treatment, not knowing that they wer pregnant. They said they did not know

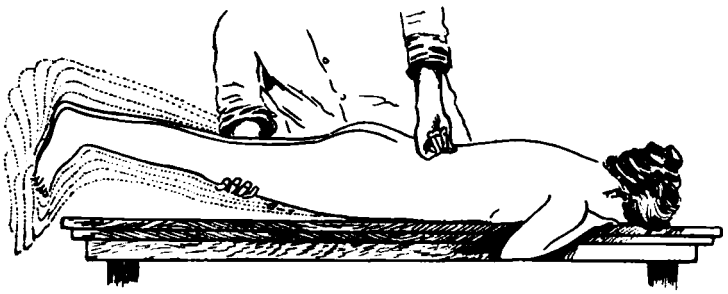


Fig. 263. Showing how to stimulate 2d and 3d Lumbar Vertebrae by hyper-extending the thighs.

they wer pregnant. With some patients it would hav causd great trouble, so now I am very careful to inquire of the lady before giving this stimulation for stomac trouble or for any indication whatsoever.

Remember that ALL spinal stimulation is enhanst by giving powerful radiant light over the spine for a few minutes before stimulating the spine in any manner.

THE SPINAL COLUM IN DIAGNOSIS

The following areas, if persistently sensitiv, refer to the organs or parts named. Altho not absolutely correct, this method of diagnosis is of great value.

1st or 2d cervical.....larynx
2d, 3d, 4th cervical.....frenic nerv
3d, 4th, 5th cervical.....teeth or jaw
5th cervical.....upper trachea and esofagus
6th and 7th cervical.....inferior cervical sympathetic ganglia
1st thoracic.....bronchial tubes
2d thoracic.....upper hart
3d thoracic.....lungs
4th thoracic.....lower hart
5th thoracic.....stomac—fundus
6th thoracic.....stomac—pylorus and duodenum
7th thoracic.....liver
8th thoracic.....diafram
9th thoracic.....pancreas and spleen
10th, 11th, 12th thoracic.....kidneys
12th thoracic.....prostate and neck of bladder
1st lumbar.....bladder, penis, scrotum, labia, perineum
2d lumbar.....uterus
2d lumbar (right).....cecum and appendix
2d lumbar (left).....sigmoid flexure
3d lumbar.....ovaries and testicles
4th lumbar.....uterus, tubes and appendages
5th lumbar.....lower bowel and bladder

Referd Pains

The first work I ever red on Referd Pains was brot to my attention by my old preceptor in 1884. This work was by Dr. John Hilton of London, and was entitled "Rest and Pain." He refers back as far as 1857. As far as I can ascertain, Dr. Hilton was the first to publish anything regarding circumscribed spinal inflammations, locating them, and successfully treating them.

For examining the spinal colum for sensitiv areas, I use aluminum thimbles on my fingers (Fig. 262). The bare thums or fingers can be employd, or the end of any blunt instrument.

Valens Therapeutic Thimbles hav proved to be a great success for spinal examinations.

Fig. 262. Valens Therapeutic Thimble. The abov illustration shows a most unique device for spinal treatments. The method of using them is to put one on the index finger and one on the middle finger. Treat on each side of the spine either by stedy pressure or by intermittent pressure. These thimbles ar also of great benefit in mapping out on a fleshy individual the course of the spine.

These thimbles can be bent at the open part so as to fit tightly to the fingers if desired. They ar made of stampt or spun aluminum.

Make pressure first on one side of the various vertebræ and then on the other. Observ whether the patient complains of pains on one side more than another, or whether he notises that one point is more sensitiv. Mark them with a pencil. Go over the areas again and see if the patient complains of the sensitivness in the markt places. If the sensitivness persists it may be a local muscular or periferal tenderness, or it may be referd from some viscera.

Freezing of the tender area wil obliterate the pain or sensitivness, if the trouble is periferal, but wil not if it is

visceral. Sometimes stedy, hard pressure over a sensitiv area wil so "block" the nervs that visceral, reflex pain is subdued. This same maneuver wil often subdue spasm in the viscera.

The Pulsoidal Current or concussion wil often, by direct or reflex action, almost instantly stop severe pain. To do this, treat the sensitiv area.

Freezing, concussion, pressure, and the sine-wave current can often be used as diagnostic agents in locating visceral disease.

If the sensitiv areas along the spine ar migrating, it indicates myalgia, neuralgia, or hysteria. Powerful radiant heat wil usually subdue myalgia or neuralgia in a few minutes. Sometimes freezing wil hav the same effect, after a few hours.

If local mesures do not mitigate the painful, or sensitiv areas, the trouble is almost sure to be in the face or its cavities, or within the body.

There seems to be a slight difference in different individuals as to the distribution of the spinal nervs.

Remember that pain can be referd from the periferal distribution of the spinal nervs to the viscera, or cavities of the body; or it can be referd from the viscera or cavities of the body to the perifery.

I am often cald upon to treat many painful conditions, especially about the spine, which I hav reason to believe ar referd pains.

Probably *intercostal neuralgia* is one of the most prevalent causes for these painful areas. If I can find a painful area influenst by pressure over a given vertebra, I look for a painful area in the axillary line and also at the sternal end of the rib attacht to the given vertebra. If I find these painful spots, I conclude that the trouble is intercostal neuralgia.

If one has severe pain in the shoulder, or back of the ear, or in other areas, and that pain can be elicited by pressure by the side of any vertebræ, I conclude that the pain is referd from the spine. For this condition I employ freezing, as this method wil work wonders in many conditions.

In *tri-facial neuralgia,* probably we find more referd pains than in almost any other condition. Look for a sensitiv area just posterior to the mastoid process, or between the second and third cervical vertebrae. By the pressure method try to trace the vertebra or vertebrae from which

the painful nerv seems to go. Freeze that area first. The next day the patient may refer to the pain in a different locality. If so, trace that out and freeze that. By following out this method, many times painful conditions that hav been persistent under every other treatment can be eradicated. (Remember that there is a branch of the trigeminus which can be traced down as far as the second cervical segment of the cord, and freezing at this location wil many times relieve or cure trigeminal neuralgia.)

In looking for the cause of referd pains about the face or neck, never forget to hav the teeth examind. For this *cautery contact** is probably the best method. Many times the trouble is caused by a diseasd root. On the other hand, sometimes what the patient describes as toothake is in reality a pain that can be cured almost instantly by freezing just posterior to the mastoid process and opposit the second and third cervical vertebrae, or by zone therapy. Pressure at these locations many times wil relieve toothake.

In treating painful areas, especially about the abdomen, make a thoro examination.

Many times pains, which can be cald seudo-appendicular pains, ar referd from the spine to the area of the cecum. These pains can be cured either by freezing from the 1st to 4th lumbar vertebrae, or by exhibiting the rays from the 2,000- or 3,000-candle-power lamp over the lumbar region. I hav often had ladies come to me complaining of pain thru the ovarian region, but on palpation I could find no hypersensitivness of the organs. Therefore I concluded the pain was referd from the spine. By either freezing or using the powerful incandescent lamp over the lumbar region, all symptoms past away.

Many times one gets just as good results from the rays of the powerful incandescent lamp, only it may take a little longer. We must study our patients and judge which modality to use. With a very neurotic patient, I would not recommend freezing, but would use the powerful light.

Painful areas about the nee hav been entirely cured by giving powerful incandescent light and slow sinusoidal current, or the pulsoidal current, over the lumbar and sacral region. Some pains in the nee or calf of the leg, as wel as pains thru the foot, indicate a falling arch or calluses. Look

*Cautery contact for the testing of teeth is described in the Lecture on Zone Therapy.

for the cause and treat that. Proper shoes in the majority of cases wil relieve the trouble.

Traction Therapy is often indicated in painful nees or in pains referd from the spine. It often acts like magic.

Cordae Tympani Nervs—
Their Function

I hav had an opportunity to lern in a peculiar manner of one of the functions, if not *the* function, of the Cordae Tympani nervs.

One of my patients, when a child, had an ulceration of the ears which obliterated the drums, as wel as the ossicles of the middle ear. By means of a delicate applicator I was able to locate the corda tympanum nerv. The moment it was toucht the patient said her mouth tasted as if it wer ful of zinc or some other metal.

This seems to show that stimulation of the cordae tympani nervs produces a metallic taste. We ar all familiar with the metallic taste in the mouth when the face, and some parts of the hed, ar stimulated by means of electricity. From my findings, I believe this peculiar taste fenomenon is causd in such cases by the indirect stimulation of the cordae tympani nervs.

This fenomenon shows how pains could be referd from the mouth to the middle ear; or how pain or bad taste in the mouth could come from an irritation in the middle ear.

"Crawling sensation" in tung is often causd by congestion in middle ear.

Itching of the tung is often causd by middle ear trouble or by a diseasd tooth.

THE INTERVERTEBRAL FORAMINA IN MAN

At this time when so much is being said and done in the way of treating disease thru the vertebrae, it is apropos that we, as physicians, know more about the anatomy of the intervertebral foramina. I cannot go into this question at any length. What we want to know is the truth and not try to deceive the public, as the public in time wil wake up. They ar beginning to wake up now.

If we knew our work better and treated our patients with more honesty, the various methods of treatment known as this and that 'pathy or 'ism would never hav obtaind such a foothold. I hav had patients come to me who hav been treated by systems known by various names, but signifying spinal or bone treatment, and they hav told me that they knew the physician was deceiving them when he talkt of "misplaced vertebrae," "dislocated vertebrae," etc.

The laity ar lerning more about anatomy, fysiology and hygiene, and some of them know more than their physicians seem to know about the subject.

For all those who wish to inform themselvs regarding the anatomy of the intervertebral foramina and wish to be honest with themselvs before passing any opinion upon any system of vertebral treatment, I would recommend reading a small work by Harold Swanberg, entitled, "The Intervertebral Foramina in Man," which is publisht by the Chicago Scientific Publishing Co., of Chicago. The introductory note by the wel-known anatomist, Dr. Harris E. Santee, of the General Medical College and Chicago College of Medicin and Surgery, might be of interest and I quote it in ful:

First edition.

"I take plesure in writing an introductory note to the monograf of Mr. Harold Swanberg. Accurate information is always valuable, and it is such that Mr. Swanberg presents. A careful investigation of the intervertebral foramina and their contents is of special interest. Tho the field is so limited, it is sufficiently broad to form the anatomic basis for several scools of practis. Mr. Swanberg shows, by actual sections the exact relations of the first thoracic nerv at the intervertebral foramina. A study of his work wil help determin whether compression of the nervs at this point is likely to occur; and whether, therefore, there is substantial ground for the doctrin that such compression is

the immediate cause of all or of a considerable number of pathologic conditions."

Introducing the Second edition, Prof. Santee says:

"Mr. Harold Swanberg has enlarged the scope of his contribution to anatomic knowledge by pursuing his investigation to its logical conclusion. His former work, to which I wrote a prefatory note, was done upon the intervertebral foramina of lower animals. That work is fully corroborated and greatly enhanst by the present monograf, which presents an equally careful study of the human intervertebral foramina. In the light of this new knowledge certain theories of spinal tension and compression must be greatly modified. The undoubted anatomic facts, reveald by Mr. Swanberg in this painstaking, scientific work, necessitates a complete restatement of the rationale of cures effected by spinal manipulation."

Recently Mr. Swanberg wrote me as follows:

"I am of the opinion that only in rare instances can the nervous structures be subject to injury in the intervertebral foramina. All my work has shown how wel Nature has protected the nervs in the foramina—the foramina being *from three to fifteen times the size of the enclosed nervs*, and the nervs themselvs being embedded in a semi-fluid substance—fat."

NERV PRESSURE AND PAIN

Dr. Harlan P. Cole of New York in his paper read before the National Society Physical Therapeutics in 1915* wel said:

"If pressure on the brachial plexus or upon the popliteal or sciatic nerv, wil produce numness or pain along the line of the nerv or at its termination, it would be equally true that pressure upon any nerv at its exit from the interspinal foramen would produce numness or pain, or interfere with its functions, at any or all points between the point of pressure and the termination of its branches."

Dr. Cole also discusses the fact that pain along a nerv or at its termination is causd by congestion and effusion upon terminal nerv fibers. These terminal nerv fibers ar very numerous along the spinal colum. Neuritis, reumatism, gout, etc., appear to come under the broad hed of "Pain Causd by Pressure."

The aim therefore of any therapeutic procedure for "reumatism," "neuritis" or any of the symptoms relating thereto, must be to *relieve pressure*. All the pains and akes that come under the various names coind to mean "pain from pressure" can be relieved by relieving stasis. Stasis can be caused by mecanical pressure from a foren body pressing on any part of a nerv, and the pain wil be described as coming from the distribution of that nerv, or from the point of pressure. Pressure can just as redily be causd by stasis from impaird blood supply (congestion) as from a "foren body."

Any agency that wil relieve stasis, must therefore go a long ways toward relieving pain and curing the cause.

Probably the most efficient agency for relieving stasis is powerful radiant light and extension or traction.

Next comes massage. Massage can be manual or mecanical, but probably the latter is the better for most conditions.

As a mecanical method of massage, probably the sinusoidal current is the best. Of course the vibrator, concussor or oscillator can be used, but they do not seem to meet the requirements as wel as the electrical currents. High frequency currents also can be used to relieve stasis, but the best of all modalities seems to be the sinusoidal current, if used in the proper manner.

*Publisht in the July, 1916, issue of Journal of A. I. H.

The *Pulsoidal Current* seems to meet all the requirements better than any other modality, after considering radiant light, heat and extension.

When it is considerd that the *Pulsoidal Current* is a rapid sinusoidal or alternating current, peculiarly intermitted in the "fysiologic rythm" the reason for this is apparent.

LESIONS OF THE LUMBO-SACRO-ILIAC REGION

Relaxations of the Lumbo-Sacro-Iliac Ligaments

The lumbo-sacral joint has many peculiarities and is intimately associated with the sacro-iliac joint. Anatomical variations in these joints ar common. Abnormal bone formation or relaxt ligaments in this location may cause lateral curvature of the spine. Such malformations cause the body to assume an unbalanst poise.

Acquired deformities in this region ar causd mostly by traumatism. In acute cases the deformity is usually one-sided, but from recurrent injuries the condition may affect the entire lumbo-sacro-iliac region.

Usually the patient knows when the injury takes place but often a faulty position in standing, or the wearing of high-heeld shoes wil gradually produce this relaxt or subluxated condition. Referd pain may be felt in the thigh, nee, ankle, or heel. I now hav a patient who complains of pain only in her side, but the cause is in the lumbo-sacro-iliac joint. She slipt on a bathroom floor and soon her pain began. I hav another patient with pain in the hip. Her condition was causd from wearing high-heeld shoes, which hav changed her natural poise and the pelvic ligaments hav been relaxt.

A change of posture or altering the shoes wil not correct this subluxation even if it does benefit.

As the flexibility of a joint is disturbd, so is the blood supply to that joint and its contiguous tissues distributed.

It is for this reason that often the subluxated condition makes a location for tuberculous infection. Sometimes syfilitic or gonorreal infection settles in this location subsequent to an injury.

The history of nearly all patients suffering with lumbo-sacro-iliac relaxation or subluxation, if carefully taken, wil show that they hav at some time, made a misstep in going down stairs or hav thot they wer going to take another downward step when alredy at the bottom of the stairs, and hav thrown the body forward in such a way as to rench themselvs. Slipping on icy pavements or on highly waxt floors is another very usual cause for this condition. As a rule the symptoms of pain wil come on within a few hours or days after the accident.

For diagnosing this condition, be sure to mesure the length of each lower lim from the crest of the ilium to the external malleolus on each side separately; and also by cross lines from the crest of one ilium on one side to the internal malleolus on the other side, when the legs ar properly centerd.

Another method of diagnosing this trouble is by making the legs lax and, with patient on back, see if the internal malleoli come opposit each other.

In diagnosing this condition, it is always advizable to hav the patient strip and watch them when they walk slowly forward and backward. Many times the evident tilt of the pelvis wil make the diagnosis quick and sure. It is difficult to describe just what gait the patient wil assume when there is a relaxation in these ligaments, as no two wil act just the same, but the condition is not hard to recognize.

Many surgeons appear to be of the opinion that there is no such thing as subluxation or a change of relation between the spinal colum and the pelvis. The only reason I can account for this is that our older textbooks did not mention this condition.

From actual observation and experience, I *know* that such a condition exists and that there can be a subluxation of the articulations of the spinal colum with the pelvis. As this relaxation of ligaments may occur between the sacrum and the ilium, lumbar vertebrae and the ilium, or a combination of both, it seems best to call the condition *lesion of the lumbo-sacro-iliac region* or the relaxation of the *lumbo-sacro-iliac ligaments.*

I hav often seen patients who complaind of pain in the lower part of the spine and after walking a little distance would say they felt as if they would topple over, and for that reason carried a crutch. This class of patients wil hav pain in the back to such an extent that very liberal bone-grafting or bone excision operations ar done. Such operations can do nothing but make the condition worse.

Just what nervs ar affected by this relaxation I do not know, but I do not think the spinal nervs ar unless it is some branches of them. It may be that the pain is a reflex. If this condition lasts for a considerable length of time, the patient wil hav what is cald a "hysterical spine" because their strength wil suddenly go away and they wil fall over. This condition seems to come from the fear the

patient has that there is going to be a severe pain from taking certain steps, and the moment the pain begins they lose confidence and in trying to relieve themselvs of the strain, they topple over. Some of the so-cald "miraculous cures" hav been done along the lines of treating the articulations of the spine and the pelvis.

The pain is usually relievd by radiations from the powerful incandescent lamp and by the pulsoidal current, or the slow sinusoidal current; but this relief is not permanent and wil not be until some powerful manipulation is done with the pelvis itself. By proper manipulation to bring the pelvis into shape, all symptoms of pain and unstediness wil quickly disappear. This proves that the trouble is with the *articulations* above mentiond.

I hav known persons who hav walkt with crutches for months who hav been cured of their trouble and wer able to go without crutches within twenty-four hours after the proper treatment.

After I hav rotated or forst the pelvis into what appears to be a normal position, I direct the rays from a powerful incandescent lamp over the back for from half an hour to an hour for two or three consecutiv days.

Traction with a suitable traction table wil often cure this condition. In using traction, I also use the radiations from the 3,000-candle-power lamp, allowing them to radiate over the joints affected for 10 to 15 minutes before beginning traction. As a rule, patients with relaxation of the lumbo-sacro-iliac ligaments, if treated as abov outlined, will be wel within a few weeks.

CLINICAL CASES: SPINAL DIAGNOSIS AND THERAPEUTICS

Case 219

Mrs. S., 40 years of age. For several weeks sufferd severe pain thru the left side of the face and over the forehed. The pain had continued night and day until she was nearly worn out. She had been examind by several physicians, some of whom told her there was a "misplaced" cervical spine that causd the trouble. Her neck had been "manipulated" with nothing but bad results.

When she was brot to me, I immediately prest on the left side of the vertebral colum between the 3d and 6th cervical vertebrae. Hard pressure temporarily relievd the pain in the face. I exerted pressure over the region of the supra- and infra-orbital foramen and the mental foramen, and the pain was aggravated.

From these findings, I concluded that the pain was causd by one of two things. There was either irritation of the spinal nervs in the cervical region or in the superior maxilla from some tooth. Before the patient came to me she had been to two dentists who examind her teeth and said they wer alright and the pain could not come from them. I knew if the pain were permanently stopt by freezing of the cervical spines on the left side, it would show the trouble was periferal. If this would not stop it, I knew the pain must be of dental origin. I therefore froze between the 3d and 6th cervical spines on the left side. After twenty-four hours the pain was no better, and from the distribution of the pain I concluded that the trouble was in the wisdom tooth of the upper jaw. I sent her to a dentist and askt him to bore out the tooth and pass a wire thru it to see if the same pain wer aggravated. If it wer, I advized pulling the tooth.

The dentist followd directions, and as the pain was greatly aggravated by the metal contact in the cavity, the tooth was drawn. Its great branching roots showd the cause of the pain. Within two davs all symptoms of ticdouloureux had past away and there has been no return of the trouble for three years.

Case 220

Another similar case was referd to me. A lady 60 years of age. The physician who had been treating her

thot her persistent ticdouloureux was causd by a neuritis of the 7th nerv, and had applied positiv galvanism over the mastoid region and over the parotid gland until the skin was very badly injurd.

Stedy pressure over the area of the 3d and 6th cervical vertebrae on the painful side stopt the pain, which had been persistent for over six months. One good freezing in the cervical area cleard up the trouble within two days.

Case 221

Another interesting case was a man about 50 years of age, who had been the rounds of specialists to be cured of a persistent pain in the right elbow and shoulder. Everything had been used on his shoulder and elbow from mustard plasters to "thermal penetration," but stil the pain increast, until he could not attend to his business, and could not dress himself.

Upon examination of the origin of the brachial plexus, I found that very severe pressure relievd the pain. Light pressure, or irritation in the spinal region, would aggravate the pain in the shoulder and elbow. From these findings I concluded the trouble was of a spinal origin.

I froze from the 5th cervical to the 5th thoracic of the painful side. That night the patient was without very much pain. I froze it the next day in the same area and that night he slept very wel and had no pain in the shoulder or elbow, altho there was some soreness from the freezing.

Two days afterward I froze this area again. Within two weeks all symptoms of pain in the arm and shoulder had disappeard and there has been no return of the trouble for over three years.

Case 222

Another very interesting case was that of a lady about 40 years of age, who had very hevy mammary glands (Fig. 215). She had been suffering with pain between the scapulae for several months and altho she had tried "all kinds of doctors," none could relieve her pain. They had neaded, twisted, and poultist her back until it was so tender it could hardly be toucht.

I had the woman strip to the waist and walk up and down the floor. I notist that she threw her shoulders forward. I then had her hold up her hevy brests with her

hands and askt her if the pain wer relievd. She said it seemd to be less. I put her on the table and gave her the slow-sinusoidal current, placing one clay pad over one pectoral region and the other pad over the other. My object was to stimulate the muscles that helpt to hold the brests up. I gave this treatment for 10 minutes and when she left the offis she said the pain was somewhat relievd. I gave the same treatment the following day.

The next four treatments wer on four subsequent days and I gave the slow-sinusoidal current for 10-minute periods, one pole being connected by a bifurcated cord to a clay pad on each brest, and the other to my vaginal electrode wel up in the cul-de-sac. After each one of these treatments, I gave her a 20-minute treatment from the 2,000-candle-power incandescent lamp over the back.

When the week was ended, she said she had no pain, felt better and rested better than she had before in months. She has had no return of the trouble.

Case 223

Some time ago I had a lady patient who complaind of vertigo and rush of blood to the hed. Stimulation of the 7th and 8th thoracic vertebrae aggravated the trouble; but prolongd, rapid-sinusoidal current in that region entirely cured her of the affliction. In this case there was too much constriction in the splancnic area. Had she been troubled with syncope and fainting spels, accompanied by paleness, I would hav used stimulation with the pulsoidal current, slow-sinusoidal current, or concussion at the 7th and 8th thoracic vertebrae.

Case 224

Several years ago a lady came to me for treatment for what had been diagnosed as "gastric ulcer," for which she was to be operated on the next week. I found that none of the physicians who had diagnosed her trouble had examind her when stript, but had taken her symptoms as she described them and had made pressure thru the clothes.

I found upon pressure over the umbilicus that pains wer experienst that she had described as coming from a "gastric ulcer." By everting the infundibuliform navel, I found an angry looking ulcer, which I treated with antiseptic powder and cotton. Within one week every one of

the symptoms of gastric ulcer had disappeard. I later lernd from this patient that she had studied all the symptoms of gastric ulcer from some advertizing book, and had red these symptoms into her own case. In that way she was able to giv an accurate description of a "gastric ulcer situated on the anterior surface of the stomac." As this lady has had no return of her symptoms for many years, I can safely say that my diagnosis was correct, and the cure permanent.

Case 225

Miss E., age 24. Anemic and suffering from weekly attacks of *migraine* for four years. Ful light treatment from powerful lamp given over entire body, 15 minutes to the anterior and the same to the posterior surface. I vibrated to inhibit sensation in the 7th cranial nerv, and stimulated the 6th and 7th cervical vertebrae. Seven of these treatments wer given during two weeks. This was about seven years ago, and her general condition has been good ever since.

Case 226

Miss G., age 32. Came into my offis, suffering with *lumbago,* which she had had for several days; could get no relief, altho she had been to her family physician. I exhibited radiations from the powerful lamp over the lumbar region for 30 minutes, and vibrated it about 5 minutes. She left the offis feeling no pain at all. For over eight weeks she had no return of the pain; then had a slight attack, when three more treatments wer given with light and vibration. She has had no return of the trouble for eight years.

Case 227

Mr. S., age 38. Laborer. Had been to several clinics and all diagnosed his trouble as *"ulcer of stomac."* Operation was advized; then he was sent to me for examination. By B-D-C methods I was sure he had no ulcer. I found by spinal reflex methods, that he had gastritis and a contracted aorta, causd by enteroptosis. He also had intercostal neuralgia, which was one cause for the erroneous diagnosis of ulcer of stomac. I put on an abdominal sup-

port the first day he came in. Gave 2,000-candle-power light over stomac for 20 minutes, and stimulated 4th to 6th thoracic vertebrae daily for a week. I froze tender spots on spine from which the "ulcer pains" arose. For the past three years he has been wel and doing hard work.

The following case was reported by *Dr. Edgar V. Moffat, Orange, N. J.*, under date of Jan. 9, 1918:

Case 228

Mrs. C., 32 years old. Miscarried when four months pregnant two months before she came to me. She had always been "a uterin bleeder" and had had several post-partum hemorrages. Habitual menorragia. Since her last miscarriage it had become persistent. Her uterus was relaxt and flabby. Her puls weak and small. Fainted easily and frequently. When I returnd home from Chicago last October, I found her stil bleeding in spite of an ample course of ergot and other indicated remedies prescribed by a physician who had been attending her in my absence.

No medication seemed to hav any effect on her. She remaind weak, anemic, puls thredy, general condition bad.

Your instruction in spinal stimulation being fresh in my mind, I thot it was a good chance to withdraw all medicins and treat her "via the spinal route." I began giving her stimulation thru the 1st, 2d, and 3d lumbar vertebrae. During the treatment she said she began to feel uterin contractions, and the flow lessend. The contractions continued and increast somewhat during the day. The next day I repeated the treatment and the flow stopt entirely during the treatment. Contractions continued and increast more markedly.

I then began stimulation of the 7th cervical vertebra to strengthen the hart and both the patient and I notist a markt improvement in the puls even during the treatment.

I continued stimulation of both of the abov areas of the spine daily for ten days with brilliant results; no return of flow, and the succeding menstruations have been normal; hart strong; no more fainting spels; gaining strength daily.

TRACTION THERAPY

The first time I saw Traction applied as a therapeutic mesure was thirty-five years ago in my preceptor's offis.

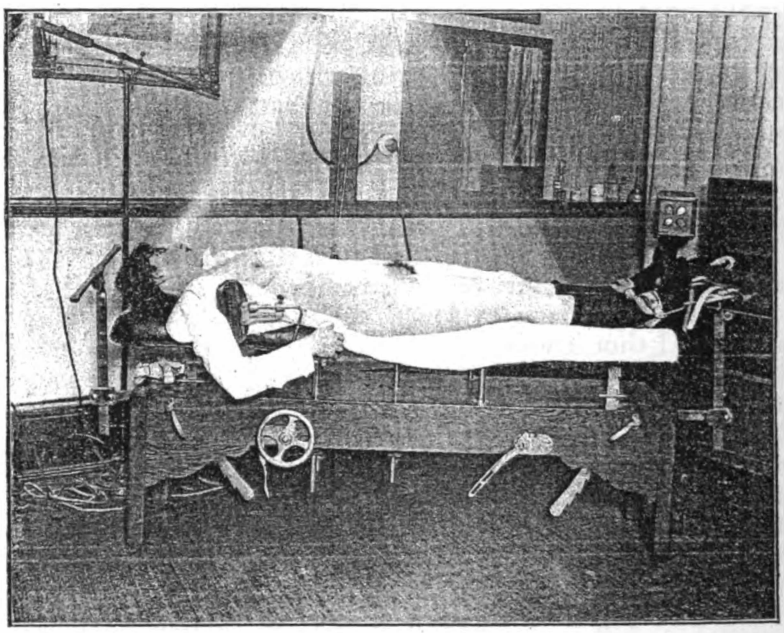


Fig. 264. Showing radiant light and traction treatment in one of the author's treatment rooms. Notis that the light from the powerful incandescent lamp radiates on the bare body while the traction is taking place. Notis that in this illustration the traction is from the arm-pits down. The patient, as a rule, is placed face down, but in stretching from the arm-pits down, I stretch and manipulate for "painful nees." For painful nee treatment, I treat the front as wel as the back of the nees and also the whole body.

His arrangement was a rope and halter attacht to a pully in the ceiling. This halter or harness was made to go under the armpits and also under the chin and back of the neck.

I hav a similar arrangement now, but owing to the crudeness of the treatment I hav not carried it out very much in recent years.

I wel remember that my preceptor obtaind remarkably good results from his traction, stretching, or "hanging" treatments. I hav seen him fasten the feet to stirrups attacht to the floor so that he could get even more tension on the body than the weight of the body alone would giv.

This method sounds crude and looks crude, but nevertheless when rightly applied, this "hanging therapy" (as I hav herd it derisivly cald) did a great deal of good.

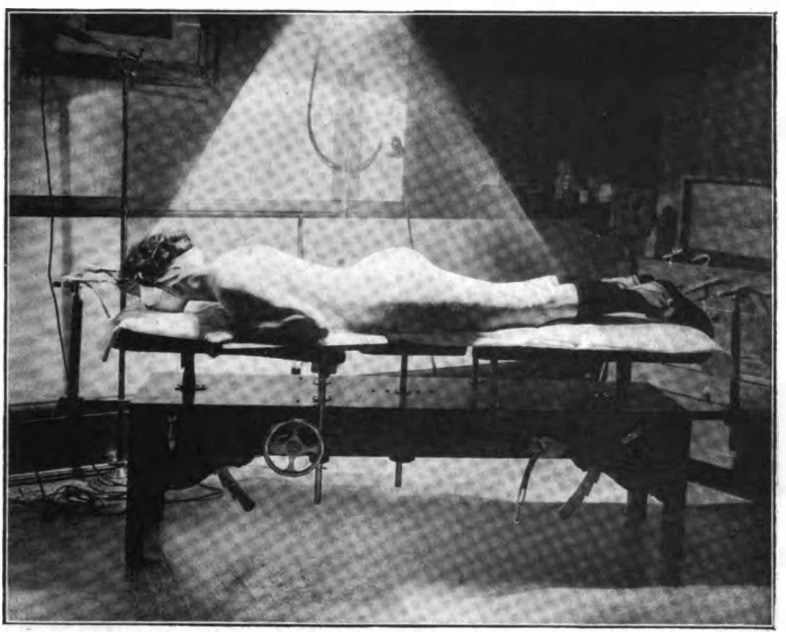


Fig. 265. Showing radiant light and traction treatment at one time. The light radiation should begin about five minutes before the traction begins and then continue during the whole treatment. Notis that the traction in this illustration is from the hed down—the whole spinal colum and lower lims ar under extension. Often the tension is more effectiv if given intermittently making the "slack and pul" about syncronous with the respiration.

I hav often herd this preceptor make the remark to his patients: "A tight joint means a poor blood supply." This, from our present knowledge of the blood supply of joints, was certainly the truth. (See Infantile Paralysis.)

I wel remember the time when the old-fashiond physician ridiculed any spinal treatments. We must all confess that there ar a good many "old-fashiond" physicians in existence today, who also ridicule all forms of spinal treatment. These, however, ar in the minority; and nothing has done more to injure the reputation of the "old style" physician than his stubbornness in accepting spinal therapeutics as a very important procedure in medicin.

We may not all agree on the "lesion" or the "cause" but the *results* ar what count and that spinal treatments, when rightly applied, do produce good results, there is no question.

Fig. 264 shows one style of traction table that I use. Altho there ar very many traction tables on the market, some worthless, and others that ar fairly good, no doubt the McManis table is the best at the present time. (Figs. 267, 268, 269.)

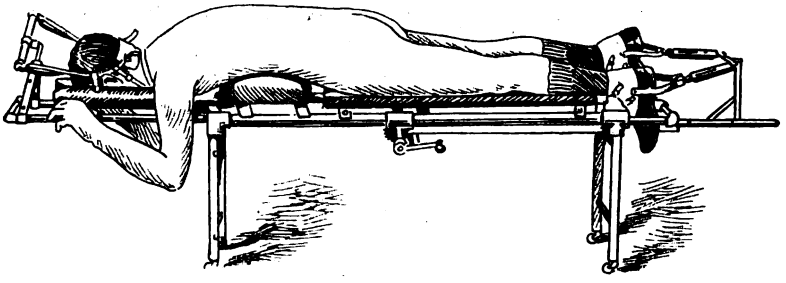


Fig. 266. Showing the Roemer Traction Table devized and manufactured by J. F. Roemer, M.D., Waukegan, Ill. Notis the spring scales on the feet. They mesure the tension. Radiant light from a powerful incandescent lamp should be directed over the back a few minutes before traction begins and during the whole treatment. Dr. Roemer uses powerful radiant light in connection with traction.

In Fig. 264 I show the use of radiant light along with traction. From my standpoint, I would not think of using traction without radiant-light therapy. My plan is to allow the radiant light from the powerful incandescent lamp to radiate on the spine for at least 5 minutes before beginning the traction. By following out this procedure, the tissues ar relaxt so that the traction, it seems to me, is more beneficial. Besides this, the blood supply is augmented thru the tissues where the radiant light has been applied, and that along with the traction helps to enliven the circulation about the joints. I think if anyone has ever used traction with

powerful radiant-light energy they wil never go back to the old way of using traction without the radiant-light energy.

Fig. 264 shows the patient lying on the back with the radiant light on the front. This position is taken when the nees especially ar to be treated. This tecnic is also used for treating some stomac conditions, the radiant light energy coming upon the anterior part of the body at the same time that light traction is given.

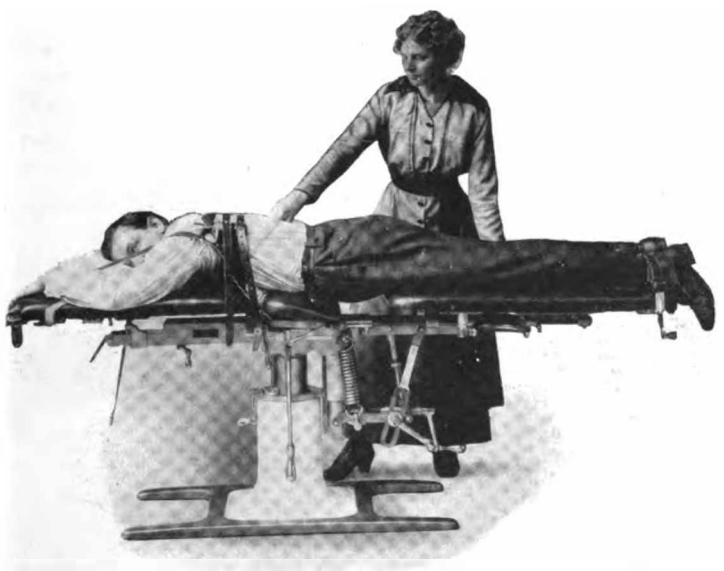


Fig. 267. Showing the McManis method of stretching the spine in combination with manual methods of manipulation. This shows one of of the most effectiv manual manipulations known. The operator is procuring a spinal stretch in combination with universal movements of the swinging table leaf, while at the same time local fixation of the joint is made. This treatment has a markt effect upon the circulation to the spinal cord. This shows the elegant McManis table.

Every user of traction must be cautiond against being over-zelous with it. Giving slight tension is more beneficial than the exaggerated tension.

I hav found that giving the traction *intermittently* is very beneficial, and it many times enhances the benefit of traction. By taking hold of the lever which extends the table, traction can be made intermittently about syncronous with the patient's respiration. This not only enlivens the

circulation about the joints, but acts as a very profound stimulant.

Fig. 265 shows the method of giving traction thru the cervical region down. It wil be notist that the powerful radiant light energy is directed over the back while this treatment is carried out.

Manipulation over the spine at the same time traction is given is of the utmost importance. After a little practis one can tel when the tension about the spinal colum is relaxt.

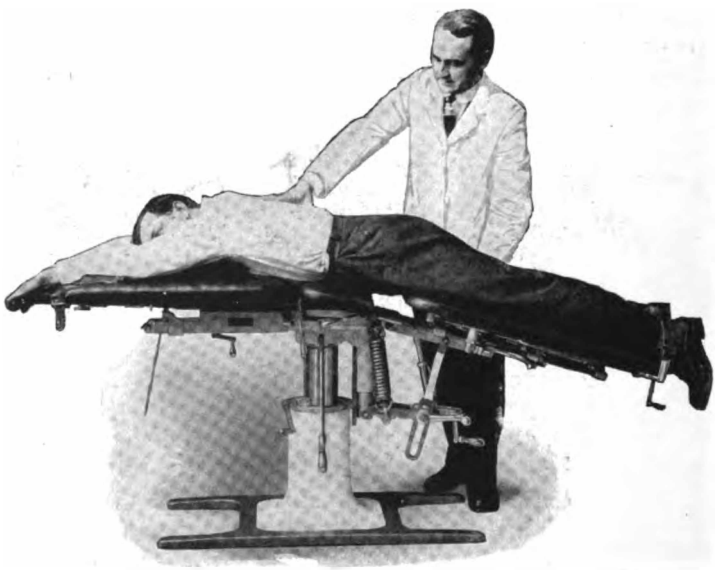


Fig. 268. Shows the French method of stretching the spine in combination with spinal manipulation. Note that no brest harness is used. This method is quick of application and obtains good results.

Fig. 266 shows a traction table devized by J. F. Roemer, M.D., Waukegan, Ill. On his table he uses spring scales for watching the amount of tension given. The interesting part of this scale attachment is that if there ar, for example, 15 pounds pul on the patient when the traction is first applied the scales wil register only about 5 pounds after 5 or 10 minutes, showing how the body has relaxt.

Of course the mesuring of tension is entirely comparativ and can never be used as a guide for all persons, as a certain number of pounds on one patient might be very injurious, while on another it would be beneficial.

Fig. 267 shows the McManis method of stretching the spine in connection with manual methods of manipulation.

Fig. 268 shows the French method of stretching the spine in combination with spinal manipulation.

Fig. 269 shows a method for stretching the cervical and upper thoracic spines.

Inasmuch as I wanted to giv my readers the most authentic and latest information regarding spinal traction, I requested the McManis Table Co., of Kirksville, Mo., to furnish me a few illustrations and a concise and practical treatis on Traction Therapy. The following subjects ar by experts in their special lines of work. Most of my readers probably know Dr. J. V. McManis, president of

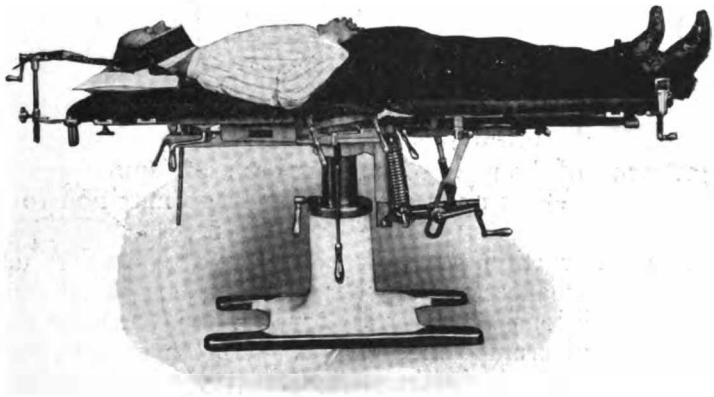


Fig. 269. Showing the tecnic for stretching the cervical and upper thoracic spines. Patient may be stretcht in this way when lying on his back or face and at the same time the spine may be manipulated to good advantage. This is a very effectiv treatment for cronic spinal lesions in this region.

this company, by reputation. The following is his *Law of Joints*. This is now recognized by all modern fysical therapeutists to be correct.

LAW OF JOINTS (McMANIS)

In the degree that the flexibility and activity of a joint (including spinal joints) falls below normal, so wil the blood supply to that joint and adjacent tissues (including the segments of spinal cord in relation) be impaird.

SPINAL TRACTION

By
J. V. McMANIS, D.O.
Kirksville, Mo.

The main thing for which I strive in Osteopathic methods of treatment, is the *normalization of tissue.* For this normalization, Spinal Traction used in connection with other forms of manual manipulation is by far the most effectiv manual treatment known.

The position or relaxation of the bones of the normal spine is a resultant of the forces brot to bear on them by the normal structure and tone of the softer tissues, viz., cartilages, ligaments, and muscles. Bony spinal lesions or malpositiond vertebrae ar therefore the *resultant* of an alteration in the tone or structure of the adjoining soft tissues.

My experience has demonstrated to me the value of traction in the normalization of these soft tissues and the adjustment of bony lesions. Furthermore spinal traction has a markt effect upon the circulation or nutrition to the spinal cord.*

Spinal traction not only has a favorable effect upon sexual disturbances, but it is also beneficial in many other conditions such as, constipation, neurasthenia, insomnia and cramps in the lims. It often secures markt and quick results in lumbago, but must not be given when the acute spasm is on. It is a valuable aid in detecting obscure lesions, removing spinal rigidity, and in treating contractured muscles. There ar, of course, conditions in which traction would be contra-indicated, some of which ar, Potts disease, hernia, arteriosclerosis, asthma, acute lumbago, some hart lesions, certain cases of hysteria, and when there is weakness of the abnormal tissues following an operation.

The use of spinal traction requires judgment and care at all times. Positiv harm may be done by its careless application. Personally I am opposed to the use of a tension-indicating device, for no two persons require or can stand the same amount of traction. The best tension indicator is the *sense of touch* of the physician who has lernd to judge such conditions from careful experimenta-

*This has been substantiated by the experiments of Motschutnovsky and Vecki in the use of spinal suspensions for the treatment of Paralytic Impotence.

tion and study. Therefore, never stretch a patient very much the first time, even if he feels that he can stand more than he is getting, for in two or three treatments the traind physician can accurately judge how much traction should be used in any particular case.

CERVICAL AND UPPER THORACIC TRACTION

By D. S. Pearl, D.O.*

Traction, applied directly to the cervical and the upper thoracic tissues, has proved to be an important addition to manual methods of treatment. But since the cervical area of the spine is completely surrounded by delicate and important structures, it is essential that great care be taken in applying traction. One should be thoroly familiar with the structure and functions of the cervical and upper thorocic spine.

In the treatment of acute torticolis, or what is commonly known as "wry-neck," traction plays an important part. Insted of applying a long, stedy stretch to the tissues, an *intermittent* one wil get the better results. Gradual stretching, for a period of from 5 to 10 minutes, with intermissions of rest for 3 or 4 minutes, seems to be more effectiv than one long, continuous stretch. Only a very few cases fail to respond to this method of treatment. After the traction is removed, the tissues wil be in a satisfactory state of relaxation and the operator can then procede with the correction of the bony lesion, if one is present.

Cervical traction is usually beneficial in treating congestiv hedakes, altho too much traction wil sometimes cause the same kind of a hedake. To treat such a condition, *stedy* traction is employd, and in addition, the operator raises the patient's ribs and stimulates the upper thoracic area of the spine. Since the patient is in the dorsal position, while traction is being applied, it is an easy matter to raise the ribs by slipping the hand under the patient, along the angle of the ribs, pul up toward the hed of the patient, using the arm of the patient as an additional lever to get the proper elevation.

Traction in the cervical area of the spine is of value in detecting and locating obscure lesions. An *obscure lesion*, osteopathically speaking, is one which is know to exist, but is not palpable, due to a lack of detectable symptoms. The rigidity may be so slight, or the thickening and shortening of adjacent tissues so little, that the operator is unable to palpate them. These lesions, however slight, ar frequently causativ factors in producing certain pathologi-

*Dr. Pearl is the Chief Tecnician for the McManis Table Company, Kirksville, Missouri.

cal disturbances in that region to which the nervs extend from the part of the spine involvd.

The shortend ligaments and muscles, which ar always present in any bony lesion, ar the first structures to be affected by stretching. A slight tenseness and soreness is at first felt by the patient, and this is exaggerated as more tension is applied. By palpation, these tender areas can be detected.

During traction, the vertebrae can be felt to separate. If there is limited motion between any two vertebrae, due to shortend and tightend ligaments and muscles, the separation between these two vertebrae wil naturally be limited. By careful palpation, these conditions can be detected by the operator and as a result he can be reasonably sure as to the location of the lesion.

After traction has been applied, the soft tissues of the neck ar found to be in a markt state of relaxation and one has no trouble in further completing the examination. We hav found that it is unwise to release the traction on the neck too quickly. To do so often sets up a reflex action in the short inter-vertebral muscles and causes them to cramp. Traction should be taken off slowly, thus allowing the tissues to gradually readjust themselves to the new condition brot on by the stretch.

Thus, traction plays an important part in the correction of many cervical and upper thoracic lesions. It separates the vertebrae, stretches the tightend, shortend ligaments and muscles, tones up those which hav been lying inactiv and stimulates to contraction the muscles which hav been thind out by the natural forces of the lesion.

SPINAL TRACTION*

Principles, Pathology and Fysiology

By W. C. WARNER, D.O., Professor of Principles and Tecnic, American Scool of Osteopathy, Kirksville, Missouri.

DISCUSSION

While the methods of removing Osteopathic lesions hav been much discust among the Osteopathic profession, very few hav attempted to commit their analyses to a concrete written form.

By some the methods of reducing lesions hav been loosely classified as *direct* and *indirect*.

Fysically forcing a bone back along the path it has taken to its malposition is supposed to represent the *direct* method of lesion reduction. So this has also been cald the dynamic or fysiologic method.

The *indirect* method includes all other means of obtaining replacement of bone or normalization of any tissue. Traction and exaggeration ar presumably the principal methods of the indirect method.

To the writer such a division seems unnecessarily arbitrary, and not only so, but from an anatomical or a fysiological standpoint such a classification does not exist.

No vertebra is ever moved in any direction in the living body without making use of the principle of traction. The vertebral muscles being in pairs and opposed in action and the ligaments being more or less the same, makes the truth of this statement redily apparent.

If the body of the 4th thoracic vertebra for example, is rotated to the left, the spinous process is carried to the right. The rotatores multifidus spinae, and the semi spinalis dorsi muscle on the left hav their origin and insertion separated. So they ar both stretcht and drawn out just as the same muscles on the opposit side ar relaxt and hav their origin and insertion approximated.

Rotation, lateral tilting, or any other movement is impossible without this double action on the part of these directly opposed muscles. It would be just as sensible to deny the upward movement of one end of a teeter-board when the other end moves down as to deny this.

*This valuable article was written for the McManis Table Company that they might hav it for this book, to comply with the author's request.

Now in the so cald direct method of lesion reduction, the return of the 4th thoracic vertebra to the resting position is brot about by relaxing the rotatores multifidus spinae, and the semi-spinalis dorsi on the left and by elongating and drawing out the same muscles on the right; in fact tensing the very muscles that wer relaxt when the vertebra first became mal-alined.

The Principle and Mecanics of Traction

Whether recognized or not this is nothing more nor less than the ful use of the traction principle.

The same happens to the other muscles and the ligaments that help in keeping the vertebra in malposition. The thind tissues ar relaxt and the contracted tissues ar directly stretcht thru the leverage of the bones.

Furthermore it is easily seen that the principle of traction is fully employd when the physician exaggerates the subluxation before reduction.

For instance, when the atlas is rotated to the right on the axis, the right inferior oblique muscle contracts down while the same muscle on the left is lengthend. The other muscles and ligaments governing the rotation of the atlas ar likewise stretcht out on one side and relaxt on the other. Now by exaggerating or rotating the atlas further to the right, the inferior oblique muscle on the left is stil further stretcht out and the impacted surfaces ar somewhat loosend. The usual procedure is then to carefully, but quickly rotate the atlas markedly to the left adjusting the lesion.

However, in so doing the operator overcomes the contracted condition of the inferior oblique muscle on the right by exerting a pronounst stretch upon its fasciculi, thus again taking advantage of the principle of traction.

So those who exaggerate a lesion before reduction depend upon the principle of traction as preliminary to the reduction and again in the actual correction. They get their results and their reputation by using the principal of traction both "coming and going" whether they giv it due credit or not.

Since traction is used in reducing all lesions, the different methods can logically be divided into first, the reduction of lesions by traction in the transverse or oblique

plane; and second, the reduction of lesions by use of traction in the longitudinal plane of the body.

Next in order is a discussion of traction as ordinarily used in the longitudinal plane of the body, having alredy observd the traction principle involvd in the correction of lesions along the transverse, or more properly speaking, an oblique plane of the body, for traction is seldom possible along an exact transverse plane due to the peculiar mecanics of the living spinal colum.

In longitudinal traction the great element of recoil has its best chance to act. The annulus fibrosus prevents undue separation of the vertebrae. When the tissues ar allowd to relax the vertebrae spring back together, but in so doing they compress the nucleus pulposus, which being more or less expansil, but retaind under pressure, immediately forces a secondary rebound and drives the vertebrae apart again. The vertebrae ar again limited in their separation by the outer fibrous ring of the disc, so they again compress the disc only to be separated again. This continues for some time and it is by far the most effectiv means of loosening articular surfaces and rejuvenating all tissues of the segment by generating new motor, vaso-motor and secretory impulses, so that all functions tend to become normal.

Moreover, while the recoil is acting at its height of effectivness after adhesions hav been broken up, the vertebra can more easily be replaced by a minimal force; for articular surfaces ar separated, tight ligaments ar loosend while stif, shortend, muscles hav been thoroly stretcht, so that there is now no barrier in the way of a simple, speedy and successful adjustment.

In the rotation and fixation of any particular vertebra a secondary side-tilting accompanies it. For example, if the body of the 4th thoracic swings to the left, it also tilts in the same direction. This movement impacts one part of the inferior articular facet of the vertebra in lesion against the superior articular facet of the vertebra below.

Among several factors the jamming of the surfaces with consequent adhesions occupies a prominent place in preventing a self-reduction of the lesion.

Traction *judiciously applied* loosens and separates the surfaces so it directly removes impingement which may hinder the return of the vertebra to its normal resting position. As a result, the jamming of the articular facets is

overcome and the normal alinement of the vertebra facilitated.

On the other hand, if the condition is not properly treated the ligaments of the vertebral colum accomodate themselvs to the malposition of the vertebra. The anterior common and the posterior common, by their lateral halvs; the lateral spinal, the subflaval and the capsular ligaments shorten and thicken on the side to which the body of the vertebra has rotated and ar stretcht, thind out and in prolongd cases atrofied on the side of the spinous process in a simple rotation lesion of the 4th thoracic or any other thoracic vertebra.

Other factors keeping the vertebra in its faulty position ar the muscles, more especially the deeper, smaller ones, as the semi-spinalis dorsi, the multifidus and the rotatores.

These on the side of the spinous process ar shortend and thickend, while on the opposit side they ar thind and sometimes atrofied.

The approximation and separation of the vertebrae, the normal contraction and relaxation of the deep muscles, the tension on the ligaments resulting from movements on the vertebral colum and so necessary to the nutrition of the spinal tissues ar markedly lessend by the presence of the lesion.

The sensory impulses arousd by the normal movement and changing stress of the spinal tissues ar responsible for the normal tone in the walls of the blood vessels, and keep the blood and lymf flowing thru the spinal area so helth cannot help but ensue. .

Effects of the Lesion

The first effect of the lesion is to cause a stream of abnormal sensory impulses to be carried to the cord, then transferd over to the cels in the lateral and anterior horns and then referd out to the region of the lesion, again resulting in contraction of tissues and vaso-constriction followd by vaso-dilation and a flabby condition of vascular walls with poor nutrition and ineffectiv waste removal.

The contracted state of muscles and rigidity of ligaments not only keep sending in further abnormal impulses, but mecanically, i.e., by impingement upon vessels, interfere with the local circulation; as a result the tissues become edematous and acid in reaction.

The muscles in the segment of the lesion at first bleed more easily, ar edematous and retain their sarcolactic acid and later degenerate as previously mentiond.

The intervertebral disc too, being deprived of normal blood, is no longer alkalin in reaction, but takes on the consistency of a soakt sponge. It is now loggy and has no longer the spring-cushion action, which is normally brot into play by jars to the upright body. The disc becomes soft, but is more like putty than rubber; it is more like soft led than steel springs. In this state superincumbent weight and malposition wil mold the disc so it wil not return to its normal contour or form without special aid.

The nucleus pulposus is flattend out on the short side, being squeezd over to the lengthend side in the rotation lesion mentiond, or if strait, vertical compression occurs, as from lifting or carrying hevy weights on the shoulders, the whole disc is masht out thin and flat. Tho it is stil flexible, the disc has lost that resiliency—the peculiar property of the nucleus pulposus, which always after strain or stress, up to the time of the lesion brot back the graceful curv so necessary to the upright posture, the delicate poise and the perfect helth of the body.

Even in the recent lesion, the straind position of the articulation, the contraction of tissues, the edema and acidity, excite such lively impulses that reflexly all tissues tighten and contract, so that motion in the joint is retarded and restricted. On the other hand, if the lesion remains uncorrected for a long time due to failing nutrition and retention of waste, further degenerativ changes occur. The water content of the disc is lessend. The nucleus diminishes in quantity, until finally only a few hardend hygroscopic granules remain. The annulus increases, becomes tuf and thick, and the vertebrae ar approximated uniformly, or on one side only, if a rotation or lateral lesion exists.

From the very first when the expansible and extensible power of the invertebral disc is lost there is great rigidity. The elasticity of the disc being gone, the muscles being contracted down, the ligaments having become thick and indurated, the ball-bearing action of the disc is markedly inhibited and very soon entirely lost.

So insted of elasticity in the area, we find tensity and constriction; insted of resiliency we find rigidity, and insted of free movement we find immobility and fixation.

Effects of Traction

What then is the effect of judicious traction on all this pathology?

First, traction so separates the vertebrae that impacted surfaces ar releast. Traction removes compression from discs, so they can regenerate. Traction stretches out buncht ligaments, so they become normal again and finally, traction removes adhesion so that choked blood vessels and half paralyzed nervs ar so freed that blood flow and nerv impulses can again hav free course.

Traction apparently initiates stimuli as effectivly as those coming from the normal movements of the muscles and ligaments themselvs. Owing to the stimulus from the use of traction (say semi-weekly) new impulses ar carried centrad, the vaso-motors assume their function again and nutritiv substances ar carried into the lesiond area while the waste is removed. The motor nervs waken and normal contraction and relaxation of tissues begin again. This of itself sends in new sensory impulses to the disturbd area so that all structures thereabouts start to functionate again.

But more than this, the muscles ar agreeably affected. It is a demonstrated fysiological law that *contracted muscles respond to a lesser pul than resting muscles.* Therefore the first application of traction overcomes the abnormal condition of a thick, tight, shortend muscle without disturbing the normal resting muscle. Then, by applying more traction, the resting muscle is stimulated to activity and a little more traction wil cause the thin and overstretcht muscle to begin to shorten and assume its function in response to the impulse from the additional minimal traction.

When Traction Must Cease

Here is where traction must stop. Tension beyond this point wil do harm, as thin muscles respond to a much less pul than either contracted or resting muscles.

Discreet traction, however, forces out from the contracted muscle directly and reflexly the irritating waste toxins so they wil not unduly shorten again to their former malposition. The normal ones ar arousd to a beneficially increast metabolism for a season, while the thin muscles wil be stimulated just enuf to shorten down to their natural state, all of which "is a consumation most devoutly to be wisht."

If the thind muscle fibers ar not entirely destroyd by the former pathology, they wil regenerate their cels and thus be strengthend as wil the thind ligament, so these very muscles may of themselvs, alone and unaided, after a time actually pul the vertebra back into line as they hav now really been given a helthy chance to functionate again. A chance which, when once given nature, she in her infinit wisdom never lets pass unnotist or unheeded.

The following cases wer reported by J. F. Roemer, M. D., Waukegan, Ill.:

Case 229

Mr. A. came to see how a friend of his was being treated by me. I askt him to allow me to use the same treatment on him so he could see just what I was doing.

I found the 2d, 3d and 4th thoracic vertebrae very much deviated from the normal and told him that would mean hedake, eye trouble, throat and nose congestion and tonsilar trouble. He told me that was what he had sufferd from for years and that his hedakes wer terrific.

I applied tension for 15 minutes and then just before the time was up, when all the muscles wer relaxt, I gave him a slight thrust on the 3d and 4th thoracic vertebrae. Two nights afterward he returnd and told me that he used to get up at least three times every night to urinate, but he had gotten up only once a night since the treatment and that he felt better in every way.

Case 230

A man suffering with strangury reported after a few treatments of tension along with powerful-radiant-light energy that he was entirely relievd.

Case 231

A doctor with a large soft prostate, which was bothering him a good deal. After a good extension and powerful, radiant-light treatment, he said his rectum felt much better than it had done for years.

Case 232

Women with pain one or two days befor menstruating, due to contracted sfincters, report no pains at all after

traction and powerful-radiant-light treatment and a *commonsense* dilation of the sfincters.

Case 233

A lady having sufferd for nearly six years with attacks of cardiospasm and pylorospasm took one treatment of 15 minutes of tension and powerful-radiant light, followd with a slight pressure on the 3d, 4th and 5th thoracic vertebrae. Came back and reported that she felt better than she had for years and was able to eat anything she felt like eating without any more trouble.

Case 234

Another young lady, who had been troubled with dyspepsia for years, after receiving one treatment of tension and big light and proper manipulation of the 3d, 4th and 5th thoracic vertebrae reported that she ate now without thinking about it at all and had not the distress that she had had for a long time previously.

Case 235

A young man who had been treated for one year by other methods for "acute indigestion," and one year for "gall stones" was relievd of the pain in just one treatment and now after two years reports he has had no recurrence. All I did was to giv him tension therapy along with radiations from the powerful-incandescent lamp for about 15 minutes and at the same time I manipulated the 3d, 4th and 5th thoracic vertebrae, but it relievd the reflex trouble which had been wrongly diagnosed by the other physicians. Had these other physicians diagnosed his trouble as reflex from the spine, they could hav cured him as wel as I.

Case 236

A lady physician 65 years of age had hart trouble. The hart mist every fourth or fifth beat and it had a distinct whir. This was relievd in just one treatment so that in one hour the whir was gone and the hart was skipping only one in every eighteen or twenty beats. The following day it mist only once in ninety beats.

The treatment was traction along with radiations from the powerful-incandescent lamp.

Case 237

Girl fourteen years of age. Could not carry an armful of groceries because the hart beat so fast and furiously. After a few months' treatment with traction therapy and radiant-light energy, she was so wel that she was able to carry off the prize in a garden contest and led her class in calisthenics to the wonderment of the neighbors.

Case 238

A young woman, who had been under observation for two and one-half years for "reumatism" and had all kinds of treatment from "mudlavia" to osteopathy, from asperin to tonsils and had been confined to bed because of the pain. Had been told by a very wel known specialist that that kind of reumatism was rarely cured. After the fourth treatment by tension and the big light, she got off the table without any pain, and after eight treatments she was able to do her housework—washing, ironing, etc.

A young man in high scool complaind of pains in the hed, dul feeling, lassitude and a general il feeling all over. After one month's treatment by traction and the big light all the untoward symptoms left him, and insted of being dul in his studies he took hold of the work as wel as the average pupil.

The irritable, grouchy, snappy sufferer, no matter from what cronic complaints, is benefited, relievd, and usually restord to normal by the treatment on the tension table along with radiations from the powerful, incandescent lamp.

Of course with all this treatment, "mix brains of a good quality."

THE MAGNETIC WAVE CURRENT

Years ago it occurd to me that magnetic energy, if properly applied to the body, must hav therapeutic value. I reasond that no disease could take possession of the body unless there wer some part misplaced electrically or magnetically. In other words, the body to be in helth must be in electric or magnetic equilibrium.

The first contrivance that I fixt up for giving magnetic wave treatment was arranging permanent magnets on a circular frame and having it revolv around the body so as to rythmically change the magnetic flux going thru the body. As this arrangement was not at all satisfactory as far as construction went, and was not exactly practical, I abandond it and lookt for something better.

My attention was cald to an apparatus which carried powerful electric magnets arranged in such a manner as to hav the body of the patient in a field of powerful magnetic energy. By actual tests I found that high blood pressure would be lowerd and low blood pressure made higher if a person sat for a few minutes in this magnetic flux. That apparatus, however, was not at all practical, being clumsy and wrongly designd.

I then examind the Bachelet Magnetic Wave Generator and found it possest just the properties that I was looking for in a very neat and practical shape.

Fig. 270 shows how I use the Bachelet Magnetic Wave Generators. There is a set of the generators back of the chair the same as in front.

It seems to me that I get better results by having the patient insulated. Therefore I hav glass insulators under the chair and also under the foot rest. It wil be notist that the chair is made with a high back so the patient's hed can rest comfortably and in the right position.

The apparatus illustrated in this figure is one of the regular style Bachelet Magnetic Wave Generators, but the

chair and platform I had made. This device works from an alternating current, and I am very much pleasd with its therapeutic action.

Many electro-therapeutists discredit the beneficial action of magnetic energy of any kind. The reason for this is ignorance. They hav never taken the time to thoroly investigate magnetism when used therapeutically in a scientific manner.

Fig. 270. Showing a Bachelet Magnet Wave Generator outfit in a corner of one of the author's treatment rooms. Notis that the high-back chair is on glass feet and that the foot rest is also insulated.

So many fake devices hav been gotten out to deceive the practitioner and the public that a good modality has often been shelvd just from prejudice.

Another reason why many good modalities ar not developt for general use is that many physicians hav little

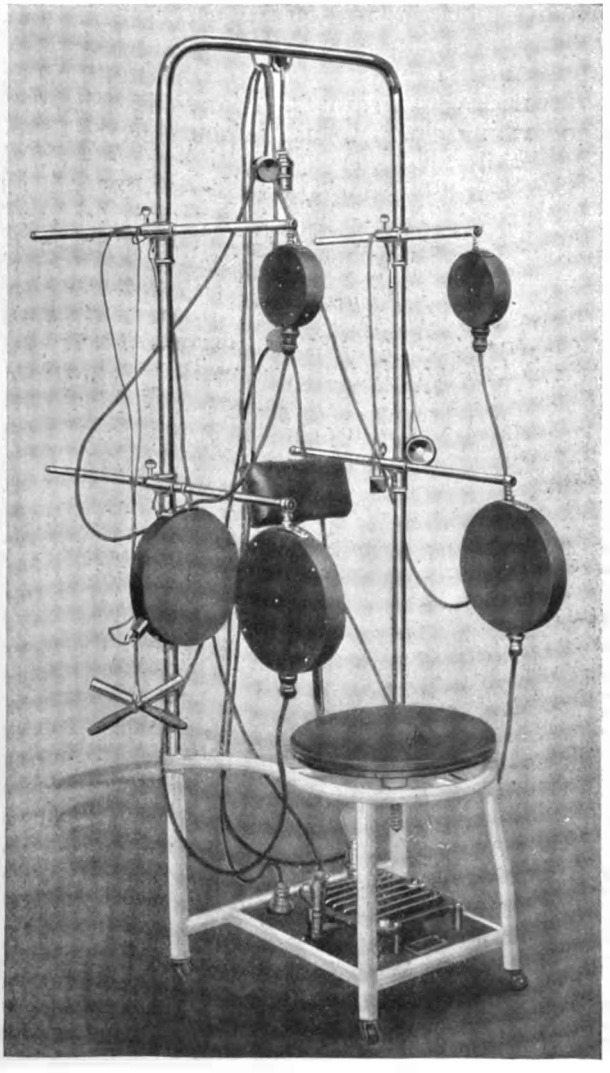


Fig. 271. Showing the newest style Bachelet Magnetic Wave Generator. Manufactured by Bachelet Medical Apparatus Co., Brooklyn, N. Y.

idea of the capital needed to place a therapeutic apparatus in their hands, and they ar not willing to pay the necessary cost. The manufacturer of any apparatus has to figure on a very large expense for educating the physicians to know just what their special apparatus wil do.

Strange to say, there is more useless electrical apparatus in doctors' offises than there is useful. This has made a great many physicians wary of every new kind of therapeutic apparatus. It may be this is the fault of the promoters of various apparatuses. Many physicians ar looking for something cheap to use in the electrical line or ar

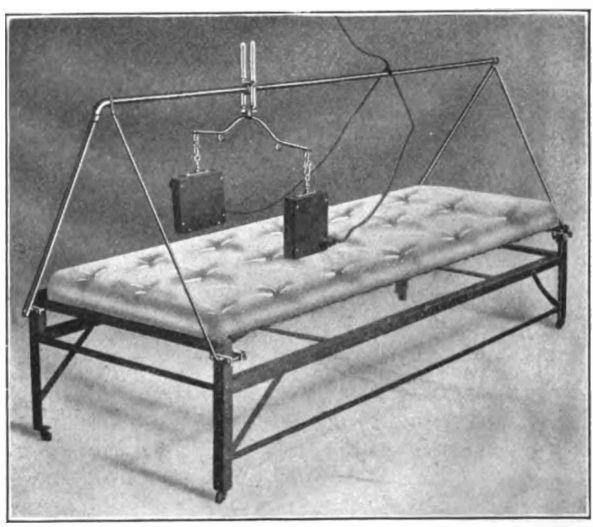


Fig. 272. Showing the Bachelet Magnetic Wave Generator attacht to a couch. This frame work is detachable.

looking for something that is spectacular rather than for something that is efficient.

This is especially true with high frequency outfits. Probably physicians hav thrown away more money on high frequency and static machines than on any other line of electric apparatus. Without investigating, they bot simply on the advice of an agent, without knowing anything about the modality or the outfit. This has hurt electrotherapeutics very much.

There hav also been all kinds of "magnetic wave" or "magnetic saturation" apparatuses put on the market, most of which hav been useless.

The Bachelet Magnetic Wave Apparatus
The Bachelet Co-Activ Generators

Fig. 271 shows the new style Bachelet Magnetic Wave Generator that is made in one unit.

Fig. 272 shows a Magnetic Wave Generator Couch. This framework can be taken down and attacht to any couch.

The Fysics, Fysiology, and Therapeutic Action of the Magnetic Wave Generator

In experimenting with the fysics connected with the magnetic wave treatment, I took one hundred very small corks and put in them a magnetized piece of steel. I then paraffind all the corks and put them in a large non-metallic vessel of water. These corks wer markt so that I would know which was the negativ and which the positiv side.

These corks would swim around in the water for some time and then apparently be at rest. I then directed the electrical current from a solenoid energized by an alternating current near this dish of water. The corks would immediately show agitation as if being stird up by something. Then they would aline themselvs in a different manner than they wer before. This I believe is similar to the action that takes place in the body in diseasd tissue when the magnetic wave current is rightly applied.

It appears as tho the magnetic wave current helps righten the abnormal rate and mode of motion but it does not appear to hav any affect upon the normal rate and mode of motion. This is diametrically opposit to what takes place with drugs because they affect the helthy tissues and sometimes make them unhelthy while being aimd at the diseasd tissue.

That a magnetic wave current properly applied does righten metabolism and thereby does normalize an abnormal rate and mode of motion in the body, there is no doubt. The feeling of warmth that the patient experiences is deep-seated, as it is not a surface warmth but a feeling all thru the body. It does not affect any one special organ but the whole economy.

There ar a good many theories as to why this is, and it wil do no harm to mention one or two of them which seem to be reasonable. It matters not whether the theory is correct or not. The clinical results hav been proved. Nevertheless it often does one good to try to formulate a reason for any therapeutic action.

Oxygenation

Magnetization and oxygenation ar inseparable. Oygen is the most highly magnetic element known. The loadstone —the natural magnet—contains three atoms of iron to four atoms of oxygen. It is this excess of oxygen which imparts to the iron its magnetic property.

If magnetized bodies contain a greater amount of oxygen than they do in their non-magnetic state, then magnetization of the iron—hemoglobin, etc.—in the blood creates in the blood cel a greater avidity for oxygen; and by the absorption of this element in greater volume more perfect combustion is made possible—metabolism is enhanst.

Blood Circulation

As the blood circulation is increast by massage, so a similar effect is produced by the frictional activity created in the cel by a magnetic wave current. By massage the blood is brot to the surface. With a properly generated wave current, the circulation is equally increast thruout the body placed within its influence, that is, any part of the body placed within the field of the co-activ generators.

The generators of the Bachelet instrument ar so arranged that they constantly, and at a very rapid rate of speed, exchange polarity with each other. That is, the generators ar alternately positiv and negativ, the waves passing in one direction one instant and in the other the next instant.

While there is no way of proving beyond a doubt that these waves actually store themselvs in the form of electrical energy in the cels, it is indisputable that the patients feel greatly invigorated after treatments and remain in this state of invigoration for a considerable period, depending upon the drain their vitality is subjected to. This clearly demonstrates that the invigoration is not merely a stimulation bringing a contrary reaction in its wake, but that it is an *increase in vitality* and power of resistance.

It is a wel recognized fact that life is dependent upon motion. In fact, life is a rate and mode of motion. Any loss or change in this celular rate and mode of motion or cel activity is accompanied by a loss in vitality or function, and a condition of dis-ease, which takes place in direct ratio to the change in the normal celular rate and mode of motion.

In conclusion I might say that while many older, conservativ physicians may not agree with me as to the hypotheses given, yet if they wil carefully and conscientiously clinically try out this modality, they must obtain findings similar to my own.

The properly generated magnetic wave current is beneficial in all conditions of impaird nutrition, and is especially beneficial in nervous diseases and in conditions where the real fault cannot be located; and this apparently is because of the beneficial effect of the magnetic wave current upon the internal secretions.

FREEZING OF THE SKIN

Application of cold over a limited area to inhibit reflexes is of great value. This gelation of tissues over the *right spot* works like magic in relieving symptoms upon which no other procedure has had any good effect. A good, strong-bulbd atomizer with the best anesthetizing ether in it, is all the outfit needed to do the work. If one can use a spray of air on the skin where the ether spray strikes, it wil hasten freezing and prevent the ether from running down the back. Ethyl clorid first applied for a second and immediately followd by the ether, wil sometimes act more speedily than ether alone. If there is an air compressor or comprest air supply in the offis, use that rather than the hand atomizer. (Figs. 150, 151, 152 and 273 show pumps that can be used for this purpose.)

Every one who does any freezing of tissues wil at times find difficulty in doing it. A great deal depends upon the wether and the condition of the patient's skin. I hav found that washing off the area to be frozen with naptha, acetone and alcohol equal parts, or benzine, seems in many cases to hasten the freezing.

There ar several other methods of freezing the tissues besides ether or ethyl clorid. Salt and ice wil do it but, as a rule, it irritates the tissues. It can be used when nothing else is at hand. The tecnic is to take a piece of ice and make it cone or cylindrical shape. Wrap in a dry towel, leaving one end exposed. This end dip into common salt. Apply the salted end to the tissue until it is frozen. Some report success with this method, but great care must be used or annoying blisters wil result.

Another method is with carbon-dioxid snow. For this purpose special freezing appliances can be had and ful directions for handling them go with the outfits. This method is fully discust and illustrated in the following lecture.

I like the ethyl clorid or ether method, and if handled

rightly, I think it is very beneficial for blocking nerv sensations, without the danger of killing the tissue, that there is with some of the other methods.

In doing any freezing, do not be over-zelous. Know just the area you wish to freeze and freeze only that. Many times I hav found it advantageous to make a vaseline ring around the area to be frozen, or a rubber form can be put on. Some freeze inside of a rubber ring. In any of this work a good deal of ingenuity can be used. I think slow freezing more effectual than the very rapid, for some con-

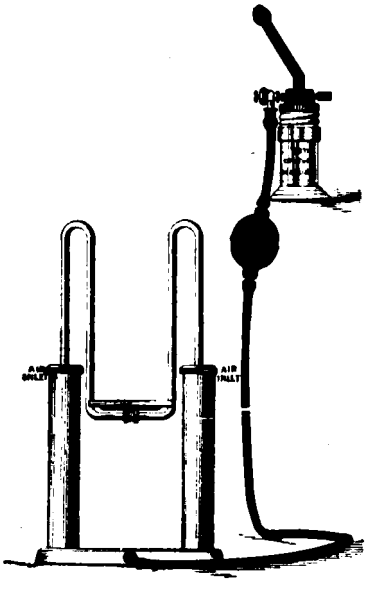


Fig. 273. Automatic Foot Pump, manufactured by Stevens Health Inventions Co., San Francisco, Calif. This foot pump can be used for ether freezing, if a good atomizer is used. Fig. 274 shows a special Freezing Atomizer. This foot pump is very convenient for nose and throat spraying or nebulizing.

ditions and on some people, but in others the rapid, carbon-dioxid snow method is far superior.

Never freeze the skin of a person with lowerd resistance, nor one with diabetes mellitus.

Dusting the frozen area over with good talcum powder ads materially to the comfort of the patient.

A Special Freezing Atomer

The special freezing atomer that I use is shown in Fig. 274.

I had many different patterns of this device made, but the one illustrated I think is about right. It has to be used with at least thirty-five pounds of comprest air. It is provided with a shut-off at the intake so as to prevent the escapement of ether from the bottle. The outlet is provided with a closed tip that can be put on when the instrument is not in use.

The special feature of this freezer is a perfect atomizing device with a fine platinum-tube outlet over which is an air tube. This air tube lets air blow on the atomized ether as fast as it touches the skin, thereby evaporating it

Fig. 274. Showing my special Freezing Atomer, manufactured by DeVilbiss Mfg. Co. of Toledo, Ohio. This is the best ether Freezing Atomer that I hav seen.

and preventing its running down on the skin and causing a very unpleasant sensation to the patient.

Another special feature of this freezing atomer is the fact that one can freeze a very small area. We can freeze an area no larger than a split pea as wel as a larger area.

I do not claim that this atomer can freeze the whole side of the body as quickly as some other design, but in all my writings on this subject I hav mentiond the fact that freezing a larger space than necessary is a wrong procedure. Find just what area you want to freeze and freeze only that, and do not freeze it too much. I hav watcht freezing for the relief of pain for over thirty years, and must caution everyone regarding its use, just as I would caution

them against the use of a powerful drug. *Know the therapeutic agent that you ar using, and use discretion in your work.*

The following is an interesting case of *Intercostal Neuralgia* cured by *Freezing*:

Case 239

A lady came to me suffering with great pain thru the chest and thot she had pleurisy or neumonia. I exhibited the radiations from the 3,000-candle-power lamp over her chest for about 20 minutes and told her to come in the following day if she wer no better.

In two days she returnd saying the "pleurisy pains" wer unbearable. I put aluminum thimbles on my fingers and examind along the spine til I found the sensitiv area from which the pain seemd to arise. I found the sensitiv area along several of the ribs way around to the sternum.

I froze over the vertebræ to which these ribs wer attacht. The following day she reported that the chest pains had disappeard but she stil had pain across the abdomen. I then froze the spines in the lumbar region on the same side as I had frozen for the thoracic pains. This cleard up the case and there has been no return of the trouble for over three years.

CARBON DIOXID SNOW FREEZING AND OTHER AGENCIES FOR LOCAL ANESTHESIA

AGENCIES FOR LOCAL ANESTHESIA

The application of low temperature to produce local insensibility is old and while the methods employd did not produce entire insensibility, they wer sufficiently effectiv to cause numness whereby pain was considerably mitigated.

Ice has long been regarded as a selectiv therapeutic agent. It moderates inflammation of the brain or its membranes and its effect of relieving severe hedakes in the erly stages of acute fevers is wel known.

By dipping a piece of ice into a solution of salt water its temperature wil be rapidly lowerd 20° or even 15° F. When it is in this condition of partial disintegration of its structures and resultant low temperature it wil cause freezing of the superficial tissues by placing it thereon, which in consequence wil produce a sufficient degree of local anesthesia for superficial, painless incision.

Ethyl Clorid evaporates under atmosferic pressure at a temperature of 54.5° F., but when sprayd upon living tissue its evaporation is greatly accelerated by the redy supply of body heat. This heat, being rapidly consumed by the evaporating liquid, produces surface freezing of the skin and tissues and insensibility of the affected locality.

However, it is usually co-associated with considerable pain during recovery, which is aggravated by the fact that a much larger area than needed for the operation has been subjected to its influence.

Liquid ether is more volatil than ethyl clorid, but does not penetrate as deeply owing to its higher boiling point which is 97.7° F. at atmosferic pressure. Hence anesthesia produced by these means is applicable only for surface operation. This explains why local anesthesia operation of this caracter is usually time-consuming and tedious, owing to the frequently insufficient as wel as evanescent, action of

the agent and therefore often as nerv racking to the surgeon as to the patient.

General anesthesia for minor operations, and especially in cases where the patient's vitality is low and where the shock-producing inhalation of the anesthetic might turn the balance, should be avoided and the employment of local anesthesia alone or with light ether or nitrous oxid is more and more demanded.

Local anesthesia by the injection method has its advocates and opponents. The most important agents used today ar cocain, beta-eucain, tropococain, stovain, novocain, quinin, urea, and alypin.

Cocain was the first of these substances employd, being used by Koller in 1884 for operations on the eye. The poisonous properties of cocain ar wel known, but most cases of poisoning hav been due to the use of strong solutions.

At the present time those who ar doing the most work with local anesthesia employ two solutions, the first of 1 per cent. for nerv blocking and a weaker solution of 1/10 per cent. for infiltration.

Beta-eucain is about one-fourth as toxic as cocain and nearly as effectiv, but anesthesia is produced more slowly and wears off more quickly.

Tropococain is about one-third as toxic as cocain, but it is a vaso-dilator and therefore directly opposed to adrenalin, which eliminates it to a great extent as a useful anesthetic.

Stovain is more irritating than cocain and causes to a certain extent motor paralysis.

Novocain has comparativly feeble anesthetic power but combined with adrenalin its value as a local anesthetic is greatly improved. While it can be used in solutions as strong as 5 per cent., most surgeous use ½ or ¼ per cent. solutions. It must, however, be carefully prepared and fresh solutions must be made for every operation.

Quinin and Urea in the form of hydrochlorid is especially valuable in selected cases because the anesthesia lasts for several days, but its solutions ar distinctly irritating to the tissue and should not be injected into infected areas. In fact this "nerv-blocking" should be used with great care.

Alypin seems to be the favorit in genito-urinary surgery and is giving satisfactory results when used in the form of tablet depositories or in a 5 per cent. solution injected into the urethra or the bladder.

Adrenalin and allied synthetic preparations greatly increase the anesthetic power of cocain and novocain, but hav little or no effect when used with beta-eucain and tropococain. Two solutions ar usually employd, a 1/400 novocain with adrenalin for infiltration and 1/100 solution for nervblocking or injecting hypersensitiv or "mist areas." Anesthesia may be produced by infiltrating each layer of skin as the incision deepens, every nerv being infiltrated as it is found, or the field of operation may be infiltrated from below upward. In this case from fifteen to thirty minutes should elaps after the injection before the operation is begun.

Carbon Dioxid Ice

Low temperature anesthesia produced by carbon-dioxid-ice-freezing is the simplest and most rapid of any anesthesia procedure. Moreover a carbon-dioxid-ice pencil may be employd with each successiv extension of the incision. In place of the direct use of the ice pencil, metallic applicators of suitable shape may be used and freezing accomplisht thru their metallic wall. In this way deeper lying lesions as wel as surface conditions can be easily and rapidly reacht.

Owing to the low temperature of the CO_2-ice-pencil, which is 110° below zero, Fahrenheit, freezing is accomplisht rapidly. A 3 to 5-second application of the pencil and a 10-second application of the metallic applicator both under medium pressure, produce a fairly deep anesthesia. It is an easy matter to gard against a too extreme effect by short freezing contacts which allow close observation and these may be repeated as the operation progresses.

If the incision is small, not exceeding half an inch in length, the anesthetic effect is quickly and painlessly procured by using the ful size end of an ice pencil. If the required incision is longer, say two or three inches, a metallic applicator having the form of a blunt nife should be used and freezing produced thru its metallic wall.

Hemorrage is usually absent because the first effect of freezing is a gradual thrombosis whereby the blood supply to the frozen area is effectivly shut off.

The method employd to produce this effect is shown in Fig. 275.

In cases requiring curetment after the incision, such as in carbuncles or other infected lesions, quite a satisfactory degree of anesthesia may be obtaind deeply in the wound by inserting a properly shaped CO_2-ice pencil or a corresponding applicator containing same, so that thoro curetting can be done with little or no pain.

The same procedure has given splendid results in cases of old, neglected and ulcerated sores.

Every case so treated has shown a remarkable tendency toward helthy granulation, which has been attributed to the friendly influence which CO_2 has upon the skin-bilding faculty of the tissue.

This peculiar benevolent effect of CO_2 has been traced back to the period of erly Greek civilization and was repeatedly pointed out ever since the 14th and 15th century.

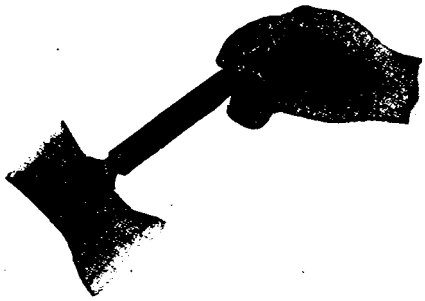


Fig. 275. Applying CO_2 snow in a strait line for local anesthesia. See Fig. *276*, applicator *e*.

Percival of Manchester 1770 found that this gas causd the disappearance of purulent matter in cases of cancerous ulcer, that it relievd pain and gave a better aspect to the wound surface. He also reported that the gas produced excellent results in non-malignant ulcers of bad condition and states that pain was always relievd, the appearance of the wound markedly improved and in some cases a complete cure ensued.

John Ingenhousz discoverd at about the same period that carbonic-acid gas had the remarkable property of quieting, almost instantly, even severe pain, such for instance, as is produced by vessication.

The first actual use of CO_2 gas for local anesthesia is reported by Dr. Follin, France, who wrote after Ewart

had publisht the treatment of two cancerous ulcer cases in 1794 "that he had tried on some patients a new method for local anesthesia, which consisted in exposing ulcerated and painful surfaces to a continuous current of carbonic-acid gas."

This constitutes the first cronicled report of the use of CO_2 gas for the purpose of local anesthesia.

Superiority of Co_2 Snow

Aside from the friendly effect which CO_2 confers upon tissue and in wounds it has the following points of superiority over all other methods:

It can be strictly localized.

It is rapid in action and produces superficial as wel as deep anesthesia.

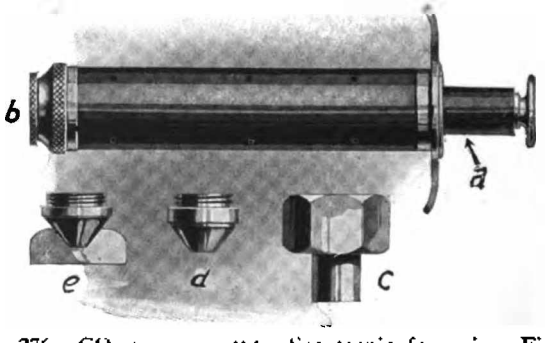


Fig. 276. CO_2 crayon outnt. See tecnic for using, Fig. 275.

It is practically painless during and after application.

Its effect is of sufficient length in duration to permit severe operation.

The cost of application is minimal.

Its use does not require special registration.

CO_2 Snow Instrument

The CO_2 crayon instrument most suitable for anesthesia work is shown in Fig. 276. The material selected for its construction is hard rubber thruout and only the trimmings ar metallic. It consists of a double cylinder perforated, which forms the basis of all the CO_2-ice-crayon instruments designd and patented by J. C. Goosmann. A layer of

packing is interposed between the double cylinder which servs the purpose of retaining the CO_2 crystals after the same hav been formd in its interior part.

This instrument does not need to be secured to the valv of a CO_2 cylinder by screw thred during the collection of the snow; in its place a fitting having a smooth nipple has been adopted.

The procedure in making a CO_2 ice pencil is as follows:

Place fitting *C* upon the valv nipple of the Carbonic Acid offis cylinder as shown in Fig. 277.

Remove plunger and place the instrument upon the smooth nipple of fitting *C* holding it with the left hand. Cap *B* closes the instrument during the collection of snow. If the cylinder valv has been tried previously, the operator wil know how far to open it to obtain the proper flow of gas.

Fig. 277. Carbonic Acid Offis Cylinder, manufactured by Alda Mfg. Co., Chicago, Ill. This illustration shows the filling of instrument with CO_2 snow.

The CO_2 snow wil collect rapidly within the instrument, and it wil fil in about 30 seconds. When quite fild, the gas entering wil hav a tendency to push the instrument away from the valv nipple sometimes with a sputtering noise. This should not cause alarm, as there is no danger whatever in the manipulation.

The snow may now be comprest by means of plunger *A*.

Next select the proper applicator for the operation to be performd, remove cap *B* and insert applicator in its place.

The anesthesia nife *E* is designd to produce a strait line of insensibility previous to incision. Point *D* is equally suitable to produce the required effect for painless use of the large sizes of hypodermic syringes.

A 5-second application is usually sufficient.

Co_2 IN WOUNDS

Modern war surgery has become more and more imprest with the experience that maintaining the nutrition of the cel is the most essential factor in increasing its resistance.

Better nutrition of the wound is obtaind by bringing to it a greater blood supply which assists the more rapid process of granulation leading to its prompt closing. This experience would indicate that the stimulating action of CO_2, either in its gaseous or solid form, wil prove highly beneficial when used for the purpose of stimulation or inflammatory reaction.

This stimulating action of CO_2 upon tissue and in wounds has been observd thru many centuries and it is one of the acknowledged elements which givs the famous Spas of Europe their therapeutical value.

Exhaustiv experience with war wounds further indicates that *irrigation of such wounds is useless* as it effects only the pathogenic organism on its *surface*. In other words, all solutions ar absolutely powerless to destroy pathogenic organisms which ar present *beneath* the surface and it is these organisms that ar doing the damage.

All micro-organisms on the surface of an infected wound ar harmless and ar of no consequence, for the simple reason that they hav been thrown out of the tissues by the exuding serum. Within the tissue there is always a plus pressure in both the blood and lymfatic vessels in relation to the surface of the wound. This means that the flow of serum is always outward toward the surface, which makes it impossible for any solution to enter.

The freezing process by means of a solidified Carbon-Dioxid pencil on the other hand reaches the cels and tissues *beneath* the surface and sets up a deep seated inflammatory reaction.

The microscope shows that this inflammatory reaction stimulates the tissues and cels in pouring out free exudation of lymf and leucocytes; the former acting as a continual flusher of the diseasd areas and the latter, by their action

of fagocytosis, assisting in the removal of the products of inflammation.

The normal cels being of greater vitality than the abnormal ones, usually ar able to react to normal after the freezing process, while the abnormal cels, or those of lower tone or vitality, naturally succum.

This observation is further corroborated by the effect produced when solidified carbon-dioxid is used for the correction of pouty granulations. These, as is wel known, ar one of the most common impediments to normal repair in wounds, particularly such as hav past thru a period of infectious inflammation.

Among the means of removing or destroying this overgrowth of granulation tissue, solidified carbon dioxid is certainly the most satisfactory. Its application is accomplisht without pain and without hemorrage so that even the most sensitiv patient wil not shrink from it.

Moreover, it accomplishes *immediate* destruction of the proliferating tissues and seldom requires more than one or two applications.

When a CO_2-ice crayon is brot into contact with a granulating surface it causes immediate shrinking to the level or even below the adjacent skin surface, and the clean crust which follows the application servs as a barrier to the further exuberant proliferation of the granulating surface, allowing the new skin to progress in its proliferation toward the normal closing of the wound.

The same treatment may be applied to cronic ulcerating surfaces and particularly to varicose ulcers, in which granuloma is prevented by the indolent overgrowth of the granulating surface of the ulcer.

The flap of a wound may be prevented from becoming adherent to the deeper structures by slightly freezing its superficial surface.

The duration of the application should be governd by the extent of the overgrowth. In all ordinary cases a freezing contact from 5 seconds to 1 second is sufficient while the pressure does not need to exceed a light medium.

Solidified-Carbon-Dioxid in Dermatology

During the last ten years solidified-carbon-dioxid has been used extensivly for the purpose of destroying tissue

and in this field it has been proclaimd the medium *par excellence.*

In its rapidity, as wel as in its results, it is without a competitor.

It is equally certain that it is absolutely devoid of danger.

The action of carbon-dioxid can be absolutely regulated, so that there is never at any time a question as to whether the entire base of the neoplasm has been reacht or not.

The cosmetic results achievd ar always beautiful in the end. The normal epithelial covering which may appear

Fig. 278. Carbonic Acid Cylinder—Offis style on stand. Manufactured by Alda Mfg. Co., Chicago.

whiter at first, assumes a pinkish hue later on and finally the color of the normal epidermis.

Pain is practically absent, the patient being frequently unable to determin whether the sensation is one of heat or of cold.

A stinging sensation is usually experienst after the frozen area has thawd out, which however, lasts only a few minutes. Lesions treated upon the temporal regions ar usually without pain after treatment, and only those which

involv larger areas and deeper structures ar more or less co-associated with pain.

A number of instruments of different designs hav been invented by J. C. Goosmann and ar now marketed by the Alda Manufacturing Company of Chicago.

The liquid CO_2 may be obtaind in a large commercial cylinder, as wel as in the offis cylinder shown in Fig. 277.

Methods of collecting the snow ar identical in either case.

LANDMARKS AND SURFACE MARKINGS

The following ar landmarks and surface markings that wil be of benefit to those who ar doing diagnostic work. Those who wish to go more thoroly into the study of landmarks and surface markings of the human body, I would refer to the small work by Dr. L. Bathe Rawling, of London, Eng., publisht by Paul B. Hoeber, New York City.

THE HART

The four points for a simplified method of marking out the outline of the hart ar (C, Fig 279).

1. The lower border of the second left condro-sternal junction.
2. The upper border of the third right condro-sternal junction.
3. The lower border of the sixth right condro-sternal junction.
4. The position of the apex beat. (This is generally in the fifth left interspace, about 3½ to 4 inches from the median line.)

Connect points 1 and 2 with a slightly convex line upward.

Connect 2 and 3 by a curvd line with its convexity directed to the patient's right.

Connect 1 and 4 by a curvd line with its convexity directed to the patient's left.

Connect 3 and 4 by a curvd line with its convexity downward.

THE VALVS OF THE HART (d and e, Fig. 279).

The pulmonary valv is situated at the highest level and lies opposit the upper border of the third left costal cartilage close to its junction with the sternum.

The aortic valv lies just below and internal to the pulmonary valv at the lower border of the third, left costal cartilage at its junction with the sternum.

The mitral valv is situated behind the left half of the sternum at the level of the fourth, condro-sternal junction.

The tricuspid valv lies very obliquely behind the sterum at the level of the fourth interspace and the anterior extremities of the fifth costal cartilage, extending downwards and to the right almost as far as the sixth condro-sternal junction.

An easy way to remember how the sounds ar transmitted in aortic insufficiency is by the word "AID," as *A*ortic *I*nsufficiency is directed *D*ownward.

*M*itral *I*nsufficiency is directed to the *L*eft, and the word "MIL" wil help you to remember it.

The ascending aorta is 2 to 2½ inches long and rises behind the left border of the sternum at the level of the third costal cartilage and passes upwards and to the right towards the right border of the sternum at the level of the second costal cartilage.

The aortic arch is directed backwards and to the left, the upper border lying about 1 inch below the suprasternal notch.

THE LIVER

(J, Fig. 279)

1. Take a point in the fifth interspace 3½ inches from the middle line, which is the position of the apex beat of the hart.

2. Take another point midway between the umbilicus and the ensiform cartilage about a finger's bredth to the right of the median line.

3. Take a point at the outer border of the rectus abdominis muscle a finger's bredth below point 2.

4. Take a point at the lower border and maximum convexity of the 10th rib, which is just within the thoracic cavity.

Connect points 1 and 2 with a curvd line with its convexity pointing downward and to the patient's left.

Connect 2 and 3 by a curvd line simarily directed.

Connect 3 and 4 with a slightly curvd line similarly directed.

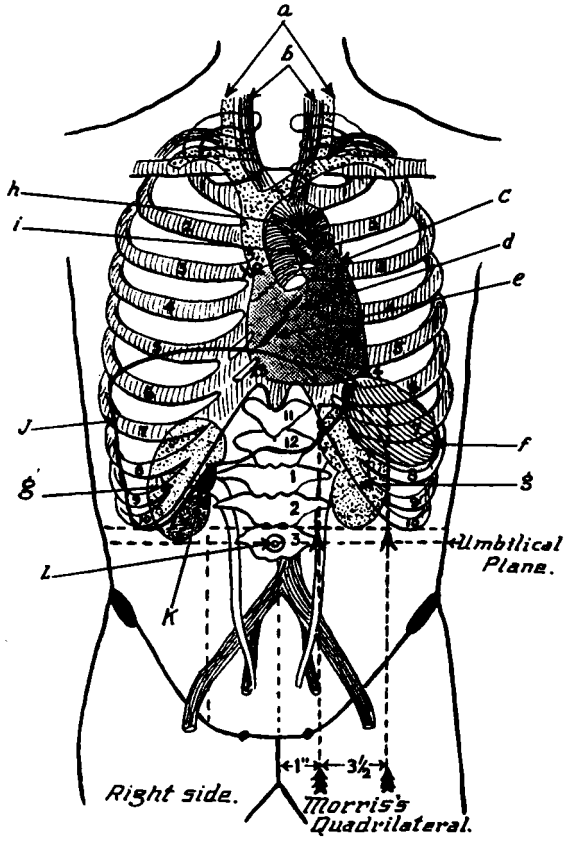


Fig. 279.

These lines, connected as abov specified, form the lower border of the liver.

The right border of the liver is the internal border of the thoracic cavity.

The upper border conforms with the diafram, which is a line starting at 1, ascending slightly as it passes to the right, cutting the sixth left condro-sternal articulation, the upper border of the right, fifth costal cartilage, and the sixth rib in the mid-axillary line.

Fig. 279 is an original drawing to show the relation and surface markings for the hart, liver, gall bladder, kidneys, and spleen, as wel as for Morris's Quadrilateral.

a represents the right and left internal jugular veins.
b the right and left common carotid arteries.
c the hart.
1 2 3 4 the surface marking points for mapping out the hart.
d the mitral valv.
e the tricuspid valv.
f the spleen.
g the left kidney.
g' the right kidney.
h the aortic arch.
i the broncus.
j the right border of the liver.
k the gall bladder.
l the umbilicus.

It wil be observd that all the viscera ar normally abov the umbilical plane. Also notis the relation of the gall bladder to the right kidney and that it is cut by a line passing thru the inner third of Poupart's ligament and the right side of the neck.

Also notis that the left kidney is about half the thickness of the third lumber vertebra abov the right. Also notis that the left kidney comes within Morris's Quadrilateral and that the lower pole of the right kidney is just abov the umbilical plane.

The gall bladder is situated at point 3 (liver) in the angle between the tips of the 9th and 10th costal cartilages and the outer border of the rectus abdominis muscle. (K, Fig. 279.)

The ligamentum teres passes from point 2 (liver) downwards and inwards to the umbilicus. (L, Fig. 279.)

Fig. 280. Showing position for marking out Morris's Quadrilateral or for demonstrating the elicitation of the MM VR over the renal region.

A quick way of locating the *gall bladder* is by locating the intersection of a line downward from the neck to the inner third of Poupart's ligament, and a horizontal line passing thru a point about a finger's bredth abov a point midway between the umbilicus and the ensiform cartilage.

THE SPLEEN
(f, Fig. 279)

The long axis of the spleen corresponds to the 10th rib, and the viscus extends upward to the upper border of the 9th rib and downward to the lower border of the 11th rib. The upper or inner pole lies about 1½ to 2 inches external to the 10th thoracic spine, while the lower or anterior pole reaches as far forwards as the mid-axillary line.

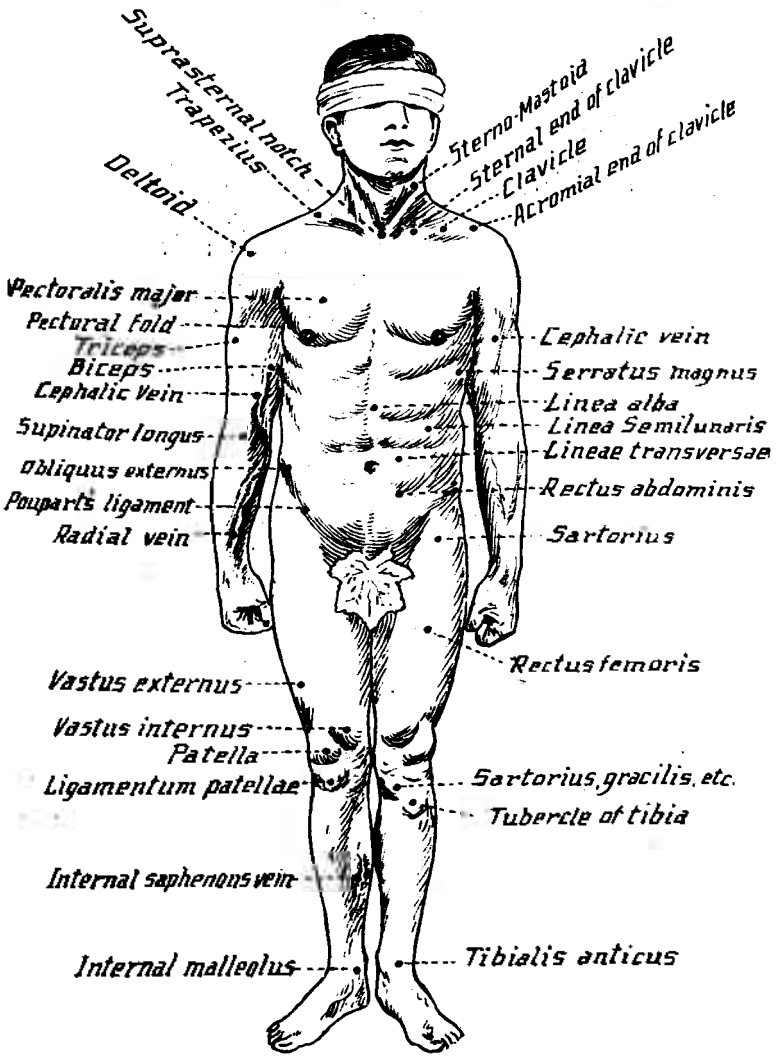


Fig. 281. Showing motor points for electro-diagnosis. From Rawling's Landmarks and Surface Markings, Paul B. Hoeber, New York City. Galvanic or Faradic or Rapid-Sine Current can be used. Use chamois-coverd, ball electrode. (See Paralysis, Part Nine.)

THE KIDNEY

(g, g', Fig. 279)

The length of the normal kidney is 4½ inches; bredth 2½ inches; thickness, 1½ inches; weight 4½ ounces.

The two kidneys ar obliquely placed in such a manner that the superior poles lie 1½ to 2 inches, and the inferior poles 2½ to 3 inches, distant from the middle line. The left kidney lies at a slightly higher level than its fellow. The hilum is opposit the space between the transverse processes of the 1st and 2d lumbar vertebrae. The transverse processes of the 1st and 2d lumbar vertebrae come in contact with the inner border of the kidney.

A line drawn around the body on a level with the lower border of the right kidney normally passes thru the umbilicus.

The posterior surface marking can be best done in what is known as the *Morris's Quadrilateral.* This quadrilateral is markt out as follows: (Fig. 279).

Two vertical lines ar drawn at a distance of 1 inch and 3½ inches respectivly from the median posterior line, and two horizontal lines ar drawn outwards at the level of the spinous processes of the 11th thoracic and 3d lumbar vertebrae. In the quadrilateral so markt out, the kidneys ar drawn, care being taken to place the long axis of each kidney in the required oblique direction. The right kidney is about a finger's bredth below the quadrilateral.

Fig. 280 shows the position for the patient to take while marking out Morris's Quadrilateral. (This same position can be taken for eliciting the MM VR over the renal region.)

Figs. 281 and 282 show the motor points of muscles. These ar beautiful drawings and very useful in *electrodiagnosis.*

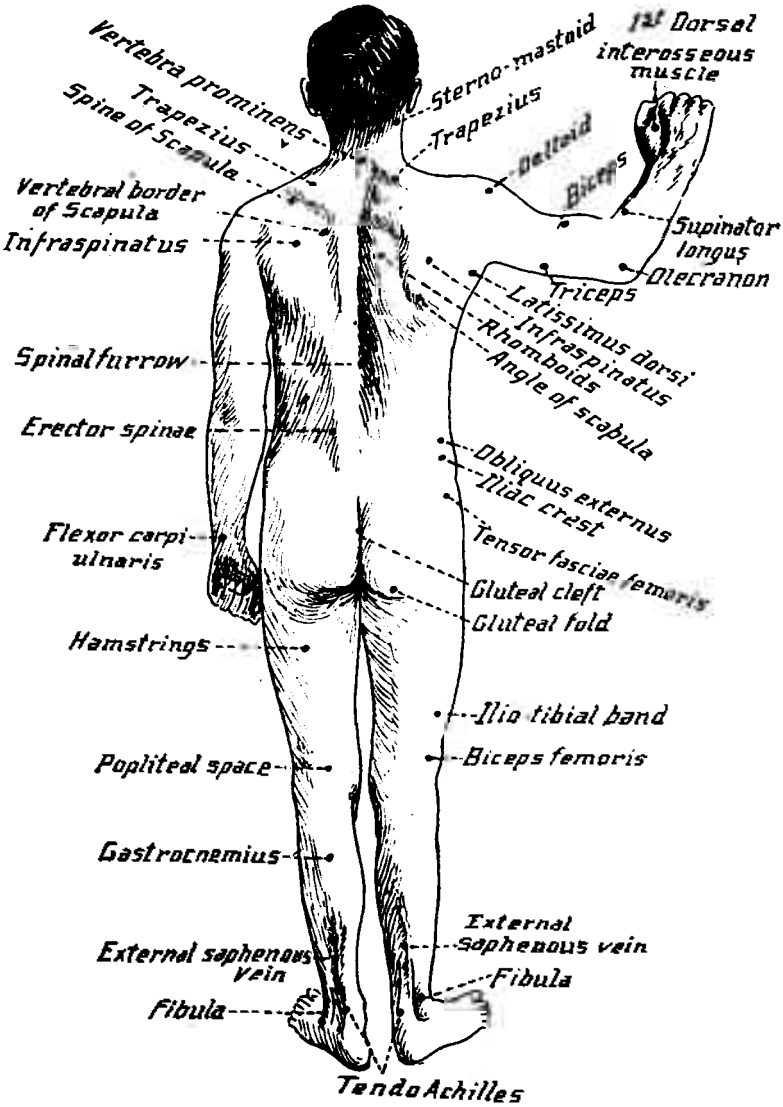


Fig. 282. Showing Motor Points for Electro-Diagnosis. From Rawling's Landmarks & Surface Markings, Paul B. Hoeber, New York City.

PART FIVE

DIETETICS IN CONCISE FORM

Books ar publisht, magazines ar regularly issued, and newspaper articles ar daily printed regarding dietetics. In looking over publisht articles regarding this most important subject, in one month one can find everything prescribed and everything deplored. This proves that dietetics is a very inexact science.

My general advice to every patient is to lean toward a vegetarian diet—vegetables, nuts and fruit. I find it meets the requirements of the greatest number of people. Do not think that I am a faddist on any kind of diet, for I am not. My general advice is, *"Eat what you feel like eating, only do not eat much. If what you eat does not agree with you, do not repeat the experiment."*

As a general rule an over nourisht person requires fruit, while a nervous individual requires vegetables.

If we all knew more about the electrical and magnetic properties of food or, in other words, the polarity effects of food, we would be nearer the dietetic goal.

We all know that the food that wil agree with one person suffering with a certain complaint wil make another, suffering with the same complaint, very il. It is for that reason that dietetics can never be an exact science. We hav to deal with the individual.

Do not wonder whether this or that will agree. Forget about that while eating. If in doubt, do not eat what you worry about.

Do not wonder how many "calories" this or that contains. It is a "fool method" of feeding a person to hav them figure about "calories." One hundred calories with one person is not necessarily the same in value with another.

MIX COMMON SENSE OF A GOOD QUALITY WITH YOUR DIET LISTS. IN MOST LISTS THAT IS OMITTED.

When you hav red "The Meaning of Electric and Magnetic Foods" in this lecture, you wil see why I think Vegetables, Fruit and Nuts make the ideal diet for ALL persons. Milk and egs can be used with such a diet, if they agree. Sometimes the yolk of an eg wil agree when the white wil not.

Personally I hav not much faith in the laboratory findings regarding food. Test tube digestion is not stomac digestion, and altho the chemist may tel us that such and such foods contain such and such properties, yet those properties may not be developt in the stomac.

Appetite and hunger ar two very different conditions. When one is hungry he can relish a crust of bred, but a person with simply an appetite wil refuse it.

As a rule, nearly every one eats too much sugar and bred. Many cases of dyspepsia can be cured by prohibiting the use of bred. Altho bred is known as the staf of life, it wil often be the club.

Probably the secrets underlying dietetics ar to eat slowly, eat only what is required, and eat with a cheerful spirit. As Professor Warman has so aptly said in his article in Lecture II, Part Four, it is not so much what goes into the man as the kind of man it goes into.

If you ar grouchy and out of sorts, don't eat. Food to the angry man is a poison. Never be afraid to make a clown of yourself while at the table. Jest and mirth at meal time ar better than the best physicians' prescriptions.

Special Articles of Diet

Rice is probably one of our best foods. The following is a recipe for cooking it:

> Let the water (salted to taste) come to a violent boil. Put in the rice and boil for twenty minutes. Pour into a colander and drain. Let a stream of water pass thru the rice to take out the starch residue.
>
> Violent boiling prevents the grains from going together or sticking to the pot. Never stir rice while it is cooking. The best rice to use is the unpolisht South Carolina product. *Never use polisht rice.*

For *skin diseases,* probably a rice diet is the best. Many authorities claim that a diet consisting exclusively of rice,

butter, bred and water, and nothing else, three times a day for a specified time (which depends upon the nature and severity of the case) wil do more toward curing eczema, psoriasis, and other skin diseases than any other known remedy.

Water can be freely taken but not with food in the mouth. Two glasses of cool water in the morning before the meal and in the evening before the evening meal ar beneficial. The patient must not eat or drink anything else, not even milk, when on a *"rice diet."*

Bananas make a very wholesome, appetizing and inexpensiv food. Personally I think the *baked* banana is the best. One of the best recipes for baking bananas is to peel and place whole bananas side by side in a baking dish with a little butter between the bananas. Sprinkle with brown sugar if desired and bake in a slow oven for twenty minutes. Serv as a vegetable.

Scallopt bananas ar also very appetizing. The recipe for cooking them is to stir one-fourth cup melted butter into two cups sifted, soft bred crums. Sprinkle the bottom of a baking dish with part of the bred crums. Cover with slices of bananas and sprinkle with a little sugar mixt with cinnamon. Repeat the layers of bred crums and bananas until the crums ar used, having the last layer crums. Ad the juice of a lemon or four tablespoonfuls of boiling water. Cover and let bake twenty-five minutes. Then remove the cover and brown the crums. Serv hot. This dish makes a very fine dessert as wel as a "ful meal."

Many persons can eat raw bananas, but if eaten raw, they should be very ripe.

Onions ar one of the best and most wholesome and "profylactic" foods known. Probably the best way to eat them is boild. If fried, they should be boild wel first and then quickly brazed.

Potatoes (spuds) ar very nutritious and wholesome. The best way to cook potatoes is to bake them. One of the best methods of baking potatoes is to scrub them with a brush and put into the oven to dry. Then brush with oliv oil and bake. When they ar done, the skins wil be soft and edible. By eating the skins of the baked potatoes, we ar getting all the vitamins which ar so important in all foods.

Radishes raw ar not to be recommended, but radishes *boild* ar very wholesome.

Lettis eaten raw with or without salt and with no other dressings, wel masticated, is one of our best tonic foods.

Celery comes next, and celery buds or harts ar no doubt one of the best tonics in the way of food.

Spinach and *greens* of all kinds, if wel cookt, ar also very beneficial because of their tonic effect.

In short, I recommend to every patient lettis, celery, spinach, and greens of all kinds if they can digest them.

It is not necessary to fix these different green vegetables with fancy dressings. Many times the dressings ar what disagree with the patient rather than the greens. *Lemon juice* is far preferable to vinegar as an acid dressing. Mustard and pepper as a dressing ar no doubt an enemy to the stomac. Anything that wil blister the outside of the skin wil doubtless hav a similar effect upon the mucous membrane of the stomac.

Of course in tropical climates hot dressing can be used more than in the temperate or cold climates. A nativ cook can be trusted better than a foren cook in tropical climates.

I recommend *senna prunes* in all diet lists for people who hav any tendency toward constipation. The following is the recipe:

> Place 1 oz. senna leaves in a jar and pour over them 1 quart boiling water. After allowing them to stand for 2 hrs. strain. To the clear part ad 1 lb. wel-washt prunes. Let stand to soak over night. In the morning cook until tender in the same water. Sweeten with 2 tablespoonfuls of brown sugar. Both the fruit and the syrup ar laxativ. Begin by eating ½ dozen of the prunes and the syrup at night, and increase or decrease the amount as needed.

In concluding this lecture on dietetics, let me impress upon you to instruct your patients to *eat what they need and only what they need. Eat slowly and do not hav too great variety at one meal.*

Eat when in a happy mood. If the happy mood cannot be found, do not eat.

The following schedule indicates the time required for the stomac digestion of various foods. I know it wil be appreciated by every physician.

TIME REQUIRED FOR THE

It wil be notist that the time required depends much on how the food is cookt. As a rule, not more than 4½

One Hour

Rice, boild
Tripe, boild
Venison, grild

One Hour, 30 Min.

Apples, sweet, raw
Asparagus, boild
Barley Soup
Beans, purée
Celery, boild
Egs, raw, whipt
Fish, not fat, boild
Salmon (fresh), boild
Spinach, stewd
Trout, boild

One Hour, 35 Min.

Apples, green, stewd
Brains, boild
Sago, boild

Two Hours

Barley, boild
Chicken, boild
Duck, roasted
Egs, raw
Milk, boild
Tapioca, boild

Two Hours, 15 Min.

Milk, raw
Turkey, boild

Two Hours, 30 Min.

Beans, boild
Goose, roasted
Hasht Meat, warmd
Lam, grild
Lentils, boild
Liver (calf's) fried in pan
Peas, boild
Pig, suckling, roasted
Potatoes, fried or baked
Turkey, roasted

Two Hours, 45 Min.

Beef, tender, stewd
Beef, fresh salted, boild
Chicken, fricasseed
Custard, boild

Two Hours, 55 Min.

Oysters, raw

hours should be required for stomac digestion. For invalids the time required should be much less.

Three Hours

Beef, lean, roasted
Beefsteak, grild
Egs, soft boild
Egs, scrambled
Fish, not fat, fried
Liver (ox), fried in pan
Mutton, boild or broild
Soles, fried

Three Hours, 15 Min.

Mutton, lean, roasted
Pork, salt, boild
Salad, raw

Three Hours, 30 Min.

Bred, fresh, baked
Butter, melted
Cheese, old
Onions, stewd
Oysters, stewd
Sausage, grild
Turnips, boild

Four Hours

Chicken, roasted
Egs, hard boild
Fowls, boild
Fowls, roasted
Salmon, smoked, boild

Four Hours, 15 Min.

Game birds, most kinds, roasted

Four Hours, 30 Min.

Cabbage, pickled

Five Hours

Nuts
Sausage, smoked
Veal, roasted
Veal, grild

Five Hours, 15 Min.

Pork, fat, roasted

Five Hours, 30 Min.

Suet, boild

Six Hours

Beef, old, salted
Eels, roasted
Stone fruit (peaches, plums, etc), raw

Over Six Hours

Alcoholic Drinks, all kinds
Clams, any style
Jam or Preserves
Lobster, any style

THE MEANING OF ELECTRIC AND MAGNETIC FOODS*

Life is a cruise on the high seas of evolution, and every turn in its sweep means a shifting of its polarities—the interplay of chemical or vital affinities between the individual and his environments. Step by step, slowly but resistlessly, evolution advances, pushing abrest the entire range of its interlinkt, interdependent forms, starting at the very gateway of life (indifferentiated protoplasm) gradually to reach the biologic eminence of the complex human organism.

The essential fact in evolution, however, and on which its entire moral value has its basis, is the fact of its unity, while it is the sundering of the latter into expressions of variety that marks the beginning of tangible and definit evolutionary life. And, furthermore, it is in these life processes of unity separating into diversity, and diversity again returning into unity, that we find the playground for the actions and reactions of magnetic and electric polarizations.

An organism is an electric coil made up by millions of celular batteries—the body cels— which each one in itself constitutes a distinct center of magnetic, electric exchanges. Vitality is a form or rather expression of electricity, a rate and mode of motion, and occupies a position to electricity similar to that of adhesion to the force of gravity.

Filosofically considerd, the affinities of the nutritional cels which in their sum total constitutes the hunger of the body, represent a desire force, prompting every unit of consciousness to enlarge its individual sfere of power and experience. Hence growth is the expression of a desire to know and to experience, felt in every atom, cel or center of conscious existence.

From this point of view, hunger and thirst become electric fenomena, rates and modes of motion, and the entire process of nutrition an exchange of ionic charges, depending for its success on the adequacy of the cels to respond to favorable affinities, in terms of fysiological tone and a normal relation to the organism.

The choice of food is thus an experience of celular needs, as exprest in hunger, digestion and assimilation.

*This article was written for the Medical Standard and appeard in the July, 1916, number. As it is so in keeping with the spirit of this lecture course, I am repeating it here in ful.

Magnetism is the static substratum of a potent world power acting as a nucleus or matrix for its electric manifestations. We may call electricity the soul of magnetism—the latent forces of the latter as exprest in the fenomena of making and breaking of affinities; in the explosions of thunderstorms, breaking of tornadoes, precipitation of rains, gratification of hunger, assimilation of nourishment, etc., according to the different planes and caracter of manifestation.

Now as evolution stands for the advance in power and refinement of the forms and forces of nature, it follows that the scope of the electric exchanges is exhilarated in proportion to the refinement of the structure on which it acts—or vice versa. The more refined the texture or substance of a certain element, the higher degree of electricity can be exprest thru it.

Hence in the *fruit* we undoubtedly possess the highest type of food as yet evolvd in the vegetable kingdom. Consequently it is in fruit that we find the strongest manifestation of electric vital energy—a fact which may explain its sometimes unique and unexpected action on the human system.

For electricity by its very nature stands for the principle of *action*. Its purpose is at once a breaking and making of equilibrium—a destroyer and creator of harmony. By the affinity for its opposits, the electric energy breaks up the heterogeneous and unstable compounds, which may be normal and harmonious as isolated processes, but become alien and destructiv, as soon as they form a hindrance to the movements of the larger life.

In the individual organism the action of any independent, separate function becomes a source of positiv poisons and inimical to the helth and life of every other function of the system. Hence, it follows that the presence of fruit in a poison-charged system, by starting a fresh series of fysiological polarizations, may result in the violent breaking up of chemical affinities, and thru the process of attraction, extraction, and destruction succede in effecting an isolation and elimination of systemic poisons, which, according to the pathological severity of the latter, may range from a mild purgation or summer complaint to a threatening tyfus, with gastro-intestinal convulsions.

The action stands for an attack of the fruit acids on the bacterial acids, the consuming fire of the electric energy, in extracting and destroying the mass of vital poisons held suspended in the cels of the system, and brot into activ, nerv-shocking engagement by the ferociously charging ions containd in the acids of the fruit. For if the system does not possess the fysiological poise and vital resistance to meet the shock, the result may be serious and even fatal. The many so-cald tomain poisonings and idiosyncracies arising from indulgences in fruit hav their true explanation, I think, in the electric action, which, like a fysiological thunderstorm, strikes its bolts into the poison nests of the organism.

It is this ever present tendency of nature to establish harmony thru a restoration, redemption, perfection and final unity of existence which we find manifested in the essence and virtue of every plant, flower, or fruit having power to clense and purge the system from its poisons.

But it devolvs on our personal attitude, on our moral motiv and self-control as to what success we may experience in this grand work of fysiological redemption. For while the action of nature upon the individual is the primary impulse in evolution, the response to this impulse in terms of individual reaction upon nature—tho secondary in order—is primary in importance. And it is in the sustaind adjustment of this balance between action and reaction, between the environmental impuls and the individual response, between the sensuous appeal and the moral application, that the meaning and purpose of evolution become at all intelligible.

In the *fruit*—this fairy woof of oxygen, sunshine and electricity—we find an acid, which, like the Trimurti in the Hindu mythology, is at once destructiv, instructiv and constructiv; or in its metafysical terminology, a destroyer, redeemer, and creator. We often make the mistake in our appreciation of fysiological disorders in relation to fruit acids, to identify the latter with the bacterial acids arising from systematic fermentation.

Hence, while reumatism and neuralgia apparently hav their origins in acids, it is a mistake to identify these acids with fruit. The mistake, however, is based upon the fact alredy referd to, that the presence of fruit-acids in a system reeking with fermentation wil stir up the bacterial breeding nests to the same effect as a gust of wind in striking a heap

of dust. The dust has not increast, but its presence has been brot into painful evidence. So far from being a fair argument against fruit as a remedy against reumatism, the condition should serv as a caution and discretion in our usage of fruit. For a remedy, if taken in moderation and under guidance of positiv knowledge, may eliminate the very disorder which a careless, thotless, blundering indulgence of the same remedy wil giv rise to.

"Nature non-salted"—nature performs no sudden leaps or bounds in her labors and her servises must, therefore, be elicited in gentleness, patience and moderation.

As the electric energy in nature depends for its presence and expression on the substance used as its vehicle, so in the order of its biological or fysiological associations, its power ascends with the subtleness and refinement of the organized substances. This givs to the fruit its pre-eminence of *electric* energy, while the vegetables by their coarseness and fibre and lack of textural penetrativness ar *magnetic,* and thus hold the biologic balance of power.

The difference between the action of the vegetable and the fruit may be exprest in the difference between the force of defense and the force of aggression; between the principle of conservation of life and the principle of advance of life!

Practically applied, this interrelation between the fruit and the vegetable has the greatest bearing upon our fysical existence.

To its very nature receptiv, the magnetic foods—the *vegetable*—bild up the attraction and eliminate by absorption, while the *fruit* by its electric qualities, its aggressivness and tendency to attack, eliminates by destruction.

Thus, a baked potato or onion introduced into a poisond system, by virtue of their magnetic properties, wil attract the poisons, and by an absorption of the latter into their matrix remove them from the organism, while a dish of strawberries or peaches wil pursue the alien elements—not to absorb them, but to destroy them—leaving the elimination of the pathological wrecks to the magnetic carriers —the alkalies in the foods and circulating fluids.

Hence, to the systematically nervous, i.e., to systems replete with organized poisons, the *vegetables*—raw or cooked, as foods or decoctions—ar safer eliminators than fruits; while to the sluggish and over-nourisht the restor-

ation and maintenance of their equilibrium require all the fresh *fruit* the seasons offer.

As a turning point or fysiological shock absorber between the electric and the magnetic foods, between the acids and the starches, between the fruits and the vegetables, we find the *nut,* the *grain* and the *eg*—the representativs of the nitrogenous elements of nature. These foods form the field of exchange—the neutralizing center for the coming and going impulsses of the alkalin and acidic force currents.

Hence a diet, to be ful and complete, must consider the judicious blending of all these foods—tho any abnormal condition of the system, due to excess—may demand the removal from the bil of fare for a longer or shorter period of the one or the other of these representativ groups of food.

While the nutritional balance and the fysiological harmony ar the ideals of existence always to be aimd at, the ever-important point, however, is to find the true method of elimination or adjustment by which such a balance can be safely reacht and maintaind.

To the wise, the pure and the self-controld, all foods ar pure, good and effectiv; while to the self-indulgent, lustful and intemperate individual every food, no matter what its intrinsic value to life, can be turnd into positiv agents of destruction. The sole garanties for a continued ascent of life lies in the consciousness of its possession, not for our own individual enjoyment, however, but for the good we, by its worthy use, can render the world—HUMANITY.

IODIN THERAPY

External Use

While treating a young lady for incipient tuberculosis, I discoverd what was to me something new regarding the action of iodin. Since writing on this subject, I hav been told by old practitioners that they hav used similar methods for years with very good results, but said nothing about it.

Altho I had used radiations from the powerful incandescent lamp along with oxygen vapor and the B-D-C therapy for the patient abov referd to, her appetite did not improve. I never force a patient to eat, but try to *increase the appetite* and in that way make them call for food, which I believe is the rational way of feeding.

This lady had to force herself to eat as much as she thot she should. Taking a cue from some of my other work, I began rubbing soluble, stainless iodin over her chest, brests, and abdomen. (In this case I used Ung. Iodi, M & J, sold under the name of Iodex.) I then allowd the radiations from the powerful lamp to fall on the anointed surface for about 20 minutes. I gave her no suggestion as to why I did this. The third day after the first application, she remarkt that she was so hungry that it seemd as if she could not get enuf to eat, and she had not had such an appetite before in five years.

I continued using iodex in this manner for several weeks and her ravenous appetite continued. Her stomac was in fine condition and she was able to digest almost any kind of food that I wisht to prescribe. Altho this treatment was given some years ago, this patient has not lost her appetite and is entirely wel from tuberculosis.

I hav used this same method on a great many patients since and almost always notis this increase of appetite after using the iodex. It is wel to allow the radiations from the 3,000-candle-power lamp to fall upon the body for about five minutes before putting the iodex on. Then anoint the part and massage the iodex into the skin under the rays of the powerful light until the black color of the ointment has entirely disappeard. After that I allow the light to radiate over the anointed part for from 10 to 30 minutes, depending upon the case.

I know that some wil say that the ointment on the skin wil prevent the light from penetrating. While this may be true theoretically, yet from practical experience, I know

it has no special bearing. As in every other procedure, theory doesn't always count. *It is the practical clinical results that should be observd.*

Internal Use

Having had such remarkably good results from using soluble iodin externally, it occurd to me that it might be beneficial to use it internally for tuberculosis, syfilis, and other constitutional intoxications. I used to giv potassium iodid simply for the effects of the iodin, but owing to the irritating effect of the potassium, which I knew was detrimental, I abandond its use. Other iodin salts hav the same drawback. The following method of administering iodin internally I hav found to be very satisfactory.

I dissolv one ounce of pure crystals of iodin in 16 ozs. of alcohol. The patient begins with 3 drops of this mixture in a glass of milk three times daily, eaten with a spoon *between* meals or at least one hour before each meal. The reason for this is that we do not want to hav the iodin mixt with starches.

I increase the dose one drop daily until 10 to 20 drops ar taken three times daily. For a young person probably 10 drops is the maximum, but for an adult, where we wish to get a good iodin effect, 20 drops ar better.

After the patient has reacht the 10, 15, or 20-drop-maximum dose, I hav them continue at that maximum dose for three weeks, after which they discontinue it entirely for three days. Then they begin again with 3 drops three times daily and repeat the procedure.

Another preparation of iodin which can be used in water as wel as in milk is Soluble Iodin—Keysall, manufactured by the Keysall Chemical Co. of Kansas City, Mo. I prescribe quantities of this preparation, as in some respects it is superior to the iodin and alcohol mixture abov described.

Burnham's Soluble Iodin, manufactured by the Burnham Soluble Iodin Co. of Auburndale, Mass., is also a dependable soluble iodin preparation suitable for internal use.

Another soluble iodin preparation put up in capsules is sold under the name of Siomine. This is a red iodin powder which is a periodid of hexamethylenetetramine made by Howard-Holt Co., Cedar Rapids, Iowa.

After giving iodin either externally or internally, the puls must be watcht. If the puls is accelerated, the iodin must be immediately discontinued, but if the puls is not accelerated the treatment can be given for several months, depending upon the condition for which it is used.

I employ iodin therapy for cancer, tuberculosis, syfilis, gonorrea, hypo-secretion of the thyroid which is found in some conditions of goiter, and many other forms of malnutrition and faulty metabolism. For high-blood pressure it is also very beneficial.

Iodin therapy as abov outlined seems to go hand in hand with oxygen-vapor therapy. The combination of the two seems to be ideal for rectifying faulty metabolism, and this is especially true in tuberculosis, cancer, syfilis, and gonoreal infections or their sequellæ.

The following is taken from some recent medical literature. Altho I hav never given more than about fifty drops of the English tincture of iodin daily, I quote this so my readers may see what others ar doing with this same treatment.

"Boudreau's endorsement of iodin internally as a potent means of hastening restoration of living tissues has been mentiond in recent medical literature.

"Iodin internally has been found particularly useful in pulmonary tuberculosis to promote rapid repair, and he here announces with special stress that injury from asphyxiating gases calls for iodin internally. He givs the iodin in the form of the tincture. (The French tincture is the one ment. One part of iodin dissolvd in 12 parts of 90% alcohol.) A drop or two of the tincture is added to each glass of water, milk, tea or other beverage taken during the day so that from five to seven doses ar thus taken daily. The dose is increast by one drop each day until some of his patients reach 300, 400, or even 600 drops a day, and keep this up a long time. 'This disease does not sleep or rest, and the treatment should be correspondingly continuous.' The lungs suffer from intoxication with gases, industrial or military, and this intensiv iodin treatment is a potent aid in the recuperation of the lung tissue."

Iodex cum Methyl Salicylate

The manufacturers of iodex hav recently put on the market a preparation of iodex along with methyl salicylate,

which is a very valuable *alterativ analgesic*. I hav found it especially beneficial, whether used alone or in conjunction with powerful radiant light energy, in arthritis, lumbago, myalgia, neuralgia, neuritis, reumatoid arthritis, sciatica, and tabetic lightning pains.

The inunction of methyl salicylate in this manner is not attended by any gastric derangements. Neither hav I ever seen any cardiac depression following its use. This cannot be said of the use of sodium salicylate when taken by the mouth. The theory of this is that the methyl salicylate finds its way into the circulation by means of osmosis and forms sodium salicylate, which no doubt is one of our best internal remedies for all "reumatic conditions."

SULFUR THERAPY

If I find sulfur indicated, which happens in very many instances, there is a method which I hav found most effectual. I do not know what name to giv this method except absorption thru the skin. I use precipitated sulfur, or sublimed sulfur, and put it into an ordinary pepper shaker. Hav the patient shake a little of this into the shoes every morning before putting them on. Within thirty days you wil hav indications that the system is thoroly saturated with the element. If the patient wears rings or earrings, tel her that they wil become black. While giving this treatment, I always advize the use of a magnesium-sulfate purge once a week. Sometimes the itching, dryness and eruption of the skin wil show that the sulfur is taking hold within a week, but I hav never known it to take more than four weeks. It depends a good deal upon the skin of the patient. This method may seem crude, but try it before passing an opinion on it. It is certainly better than giving sulfur thru the stomac, and as it is taken up so slowly, we get a profound sulfur effect in the system. As soon as the patient complains of much pruritus, stop the drug. Sometimes an erly morning diarrea wil indicate that the sulfur has impregnated the whole system.

I often use this sulfur treatment as an adjunct to the cure of any skin disease, especially where there ar burning and itching connected with it. Always bear it in mind when treating *any* skin disease.

For treating syfilis, this sulfur medication is a valuable adjunct.

THE COLON

In my work as a general diagnostician, I often find patients whose trouble I am sure is located in the colon. Many of these people hav been to very many physicians for diagnosis and each one diagnosed the case different than the other. As a rule, the colon in diagnosis is forgotten.

Altho I hav diagnosed very many cases as suffering from diseases of the colon, yet my method of treatment was along electrical lines and required a month or six weeks to righten. I hav always thot that I obtaind good results by treating these conditions by means of the pulsoidal current or the slow sine current thru my bi-polar rectal electrode.

Thru the advice of Dr. D. V. Ireland I obtaind a set of sigmoidoscopes and he showd me how to use them. We lookt over several cases together and I was surprized at what one could see by means of these instruments. I had been diagnosing blindly diseases of the colon and could never get a picture of the colon as it appeard to my eyes when looking at the lesions directly. So imprest was I with Dr. Ireland's expert work along these lines and because of his long experience in this line of work, I askt him if he would write a lecture for this book.

I might say that if anyone ever wisht to lern the tecnic of sigmoidoscopic examinations, I know of no one better than Dr. Ireland as an instructor. I can recommend him most highly.

DISEASES OF THE COLON AND THEIR ETIOLOGICAL RELATION TO OTHER HUMAN ILS

By D. V. IRELAND, M.D., Columbus, Ohio.

DISCUSSION

Examination of the colon for diagnostic purposes is seldom thot of by the general practitioner of medicin, and is seldom, if ever, made except by the isolated specialist far removed from the general public.

Few hav ever seen the inside of a living colon, therefore but few hav any conception of the multiplicity of ils that lie hidden therein.

This dereliction is directly responsibile for more sickness and deth than all other causes combined, and has left totally unexplord a field richer in pathology and etiology than any other.

It is only since the "bacterial origin of disease" was exploited by such men as Pasteur, Koch, Klebs, Lister, and others that the profession has awakend to the fact that about all diseases ar due to *toxemia* and hav sought to find the focal point of infection in each individual case.

The tonsils hav been ruthlessly slauterd—whether found guilty or not. The teeth, the ears, and all the obscure cavities about the hed hav come in for their share of investigation. The appendix vermiformis has been pursued with as much zeal as St. Patrick pursued the snakes in Ireland—until they wer all driven out. Surgeons hav tried in vain to "Burbank" the human form divine and bring him forth without an appendix, claiming *it* to be the arch offender.

Most modern writers ar willing to admit that a large percentage of all ils ar due to faulty elimination from the colon into some pathological condition therein. Yet they all pass the subject up with a few general remarks or without mentioning it at all.

The notisable derth of literature upon the colon and its diseases can only be accounted for on the grounds of a deplorable lack of knowledge of the subject. The inability to explore this field has led to many mistaken diagnoses.

Sigmoidal troubles in women ar constantly being diagnosed as ovarian or uterin diseases; in men, as prostatic

or appendical. Too many helthy ovaries and appendices hav been sacrificed on account of this error.

Under modern methods of aseptic surgery, opening of the abdomen for the purpose of clearing an obscure diagnosis has come to be regarded as the proper thing. Unfortunately, most cases of colon disease cannot be diagnosed thru an abdominal incision, and the real offender escapes detection, while an appendix or perhaps an ovary is sacrificed. Happily, the crest of this surgical wave seems to be passing with the older and more conservativ men.

Only a few days ago one of our leading surgeons, a conscientious, broad-minded gentleman, brot a case to me for examination. A skiagraf had shown an acute angulation in the sigmoid—the result of a contracted mesocolon. He said to me, "I am sick at hart with operations for colon troubles." When there ar adhesions they ar made more extensiv by operation, and if there ar no adhesions, they ar so likely to follow abdominal operations that the patient is often left in a worse condition than before.

After having made over two thousand examinations of the colon and after having witnest so many happy results from treatment applied directly to the diseasd areas, I feel that it is a duty and a privilege to impress upon my readers the great importance of this work.

A broader knowledge of the diseases that affect the colon wil lead to a better understanding of the etiology and treatment of most human ils and to the relief and ultimate cure of many conditions that wer formerly clast as incurable. "Examin all things and hold fast that which is good" seems a reasonable injunction in this case. *To deny peremptorily the value of anything of which we know nothing is worse than pueril.*

What I shal state ar facts. One fact is worth more to me than much theory. If the theory does not conform to the facts, so much the worse for the theory.

Murchison states that "A circulation is constantly going on between the fluid contents of the bowels and the blood, the existence of which until the last few years, was quite unknown and which even now for some unaccountable reason is too little heeded.

Dr. Parker says, "In varying degrees there is a constant transit of fluids from the blood into the alimentary canal and a correspondingly rapid absorption from the

bowels back into the blood stream. The amount thus pourd out and again absorbd is almost incredible and of itself constitutes a secondary or intermediate circulation never dreamd of by Harvey."

In a case examind by Grunewald, the amount of gastric juice alone pourd into the stomac and again reabsorbd was about 23 pints in 24 hours.

The pancreas is said by Kroger to furnish 12½ pints in the same time. The salivary glands 3 pints, while the amount of bile excreted in the same time is something over 2 pints.

The amount secreted by the intestinal glands cannot be mesurd but it must be something enormous.

Altogether the amount of fluids circulating from the alimentary tract into the blood and back again in 24 hours greatly excedes the whole amount of blood in the body.

Of the substances absorbd into the blood stream, such as ar redy for assimilation and body repair ar at once appropriated for that purpose while portions not suitable ar returnd to the alimentary tract to undergo such digestion or chemical changes as ar necessary in order that they may be appropriated or else eliminated from the body.

Absorption from the colon is very rapid. When a patient is familiar with the taste of a drug that I am using in the colon, he wil frequently tel me before he leaves the table that he tastes that drug.

With the salient features of this intermediate circulation in mind, if you wil imagin a colon suffering from one or more of the cronic diseases so common to this organ, for example, cronic hypertrofic catar with the mucous membrane separated from its muscular coat by germ action, the membrane constantly macerated in a muco-purulent secretion teeming with toxicogenic micro-organisms, it is quite easy to foresee the results. These toxicogenic germs and their toxins in connection with the saprofitic bacteria contaminate the fluids in the colon, which ar thrown back into the blood stream reeking with poisons.

Fortunately for human kind, nature has bilt up a wonderful system of defense against this invasion of deth-dealing principles selse we could not exist at all. The fagocytes of the blood constitute an army of defense which attacks all foren invaders and destroys them as far as possible. The lungs, kidneys, skin, bowels, and all mucous

tracts take part in the elimination of these poisonous principles. The kidneys alone ar cald upon to eliminate 48% of the waste of the body while the bowels eliminate 12%. With this grand system of defense in perfect working order, a reasonable degree of helth may be maintaind for a time, but eventually some organ or tissue must yield to the overload of toxins and a secondary disease is the result. The kidneys, having the greater amount of the burden to carry, ar often the first to break down. The constant flow of toxins thru the delicate tubules cause irritation, inflammation, and finally suppuration.

Experience has led me to believe that practically all cases of Bright's disease and other inflammatory diseases of the kidneys ar due to auto-toxemia and that in most cases the toxins ar generated in the colon; and if the source of the toxemia is removed these cases recover, while under any other treatment they ar hopelessly lost.

All cases of high blood pressure that hav come under my observation since specializing in colon work hav proved to be toxemias, and as the colon recovers the blood pressure gradually drops to normal.

The uterus is often the safety valv too of a poisond blood stream from colonic infection. The profuse serous or sero-purulent discharges from which so many women suffer is only nature's choice of this avenue for eliminating certain principles of the blood which find exit thru this channel.

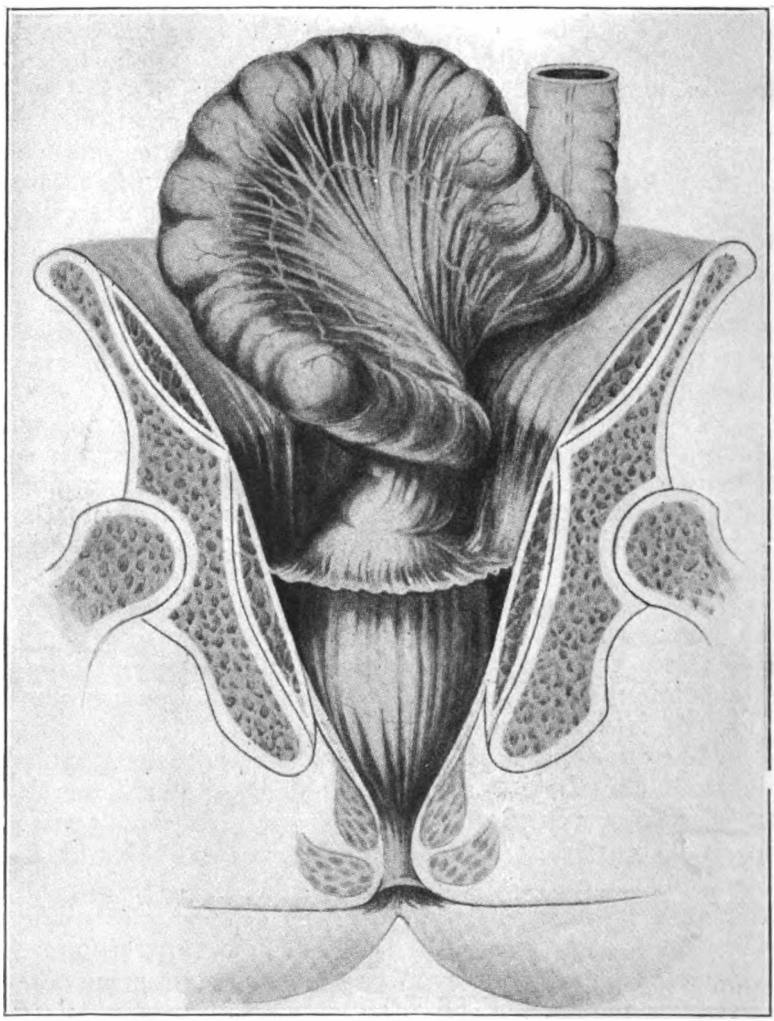
Skin diseases result from the invitation of toxins which the skin is cald upon to eliminate.

I hav never examind a case of tuberculosis or cronic bronchitis in which I faild to find a diseasd colon or rectum. This fact is significant, to say the least.

The muscular coats of the colon ar both longitudinal and circular (Figs. 283, 284). The longitudinal muscles being shorter than the colon proper giv it its sacculated or pouch-like appearance. When the longitudinal fibers ar dissected off, the sacculated caracter of the tube is lost. The circular fibers ar especially accumulated in the intervals between the sacculi. Inside the bowel at points corresponding to the depressions made by the circular muscles on the outer surface ar semilunar folds of mucous membrane which diminish the lumen of the tube at these points and thus assist in forming the "buckets" or sacculations of the colon.

The function of the semilunar folds (Fig. 283) is to impede the movement of the fecal matter, thus allowing more time to complete the process of digestion and to insure better control of the bowel movements.

In cases of cronic fermentation in the colon, these "buckets" become greatly distended with gas, forming re-



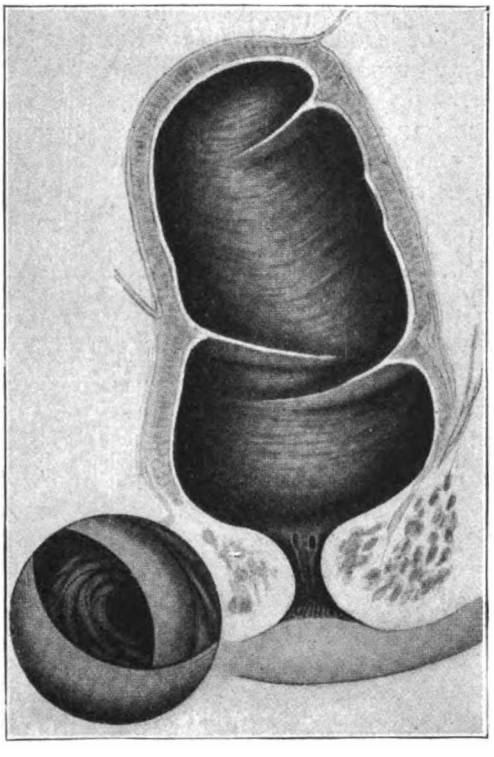
(From Bodkin's Diseases of the Rectum, E. B. Treat & Co., New York City.)

Fig. 283. Showing the Rectum and Pelvic Colon.

ceptacles for the lodgment of fecal matter which may lie there until quite hard and ancient, when it acts as a foren substance causing irritation, inflammation, or even ulceration or abscess.

The Importance of Colon Work

Owing to the facts set forth that so many human ils ar due to some one or more of the pathological conditions



(From Bodkin's Diseases of the Rectum. E. B. Treat & Co., New York City.)

Fig. 284. Showing usual location of Houston's Valvs. Smaller picture at left shows the valvs as seen thru the proctoscope.

found in the colon, I hope to impress upon my readers the importance of a more intimate knowledge of this work. No other line has been so sorely neglected nor is there one that has taken such a toll of human life, much to the shame of the medical profession.

It is not possible to estimate the percentage of ils that hav their origin in colon infection, but I am safe in stating that it is greater than from all other causes combined. It is true the prostate gland or the uterus and its appendages ar sometimes primarily the source of infection; but when you find trouble with any of these don't neglect the examination of the colon to see whether it may not enlighten you stil further.

This statement may seem too broad on first thot, but before criticizing it too severely, stop long enuf to inquire of yourself whether you ar satisfied with your results in the treatment of cronic diseases; what per cent. ar you actually curing by conventional methods, and then inquire why the others do not recover.

You may hav an awakening to the fact that you ar not finding nor removing the cause of the trouble in so many that fail to be cured.

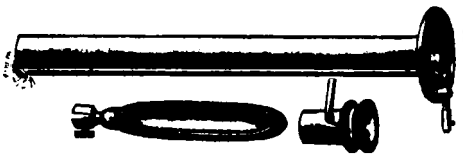


Fig. 285. Tuttle Sigmoidoscope.

This same self-examination may explain to many of us why the laity hav become flusht like a bevy of quails and ar flying hither and yon after every new cult that enters the field. The medical profession alone is responsible for the existence of all these pathies and cults.

My sincere regret is that I was not familiar with this work when I began the practis of medicin (some thirty-seven years ago) ful of hope, enthusiasm, and materia medica insted of in my latter days when I am looking "toward the setting sun." Happily my energies ar stil young and my desire to relieve human suffering increases with my years.

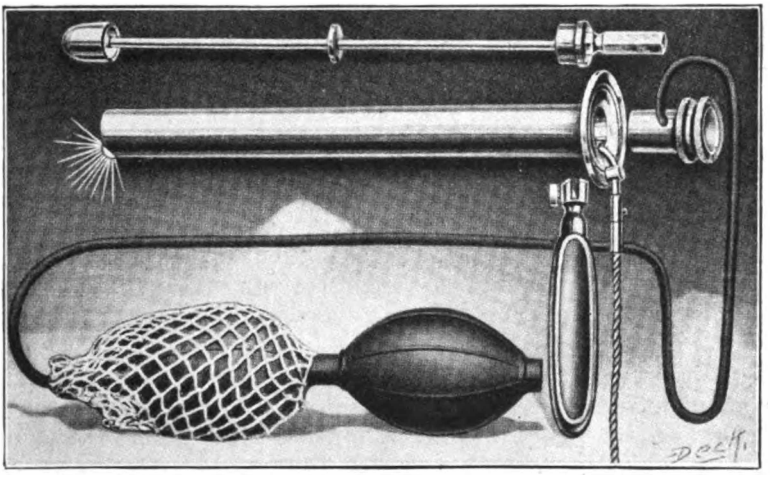
For the last quarter of a century I hav maintaind that nearly or almost all diseasess, ar toxemic in origin and that in most instances the focal point of infection is in the colon.

After seeking in vain for some literature on the subject, I secured sigmoidoscopes (Figs. 285, 286) and began to investigate on my own initiativ. After discouraging fail-

ures and the loss of much perspiration, I finally masterd the instrument. Since then I hav lernd to view disease from a different angle and hav been able to greatly benefit or cure many conditions that I had heretofore clast as "incurable."

Constipation

Practically all of the cronic patients who haunt your consulting rooms suffer from constipation. The condition is so prevalent that most of us hav come to look upon it as semi-fysiological—a condition that is to be endured rather than cured. The patient seldom mentions it unless



(From Bodkin's Diseases of the Rectum. E. B. Treat & Co., New York City.)

Fig. 286. Showing Tuttle's neumatic proctoscope.

it has gone beyond his ability to control it with laxativs or enemas.

This state of affairs is largely the fault of the medical profession, and is just a little short of criminal. Constipation and a helthy colon ar incompatible. It is not a disease *per se* but a *system* of disease, and that disease is in the colon.

It is a relativ term and denotes a slow or insufficient action of the bowels. The frequency of bowel movements is not indicativ. Many who hav daily movements from the

bowels suffer more from constipation than others who hav fewer movements.

The "buckets" of the colon may be impacted with ancient fecal matter which acts as a foren substance and keeps up a constant irritation of the mucous coat, which eventually results in inflammation and perhaps ulceration or abscess.

Toxicogenic bacteria ar always present whose toxins enter the blood stream, producing auto-toxemia.

Constipation is due to many causes, such as faulty diet or perverted habits.

Motor insufficiency is due to lowerd vitality or prolongd distension of the colon from gas which stretches and eventually paraylzes the muscular coats of the bowel and checks or weakens the vermicular action. Lack of sufficient fluids is another very common cause of constipation, and such patients should be instructed to increase their consumption of water.

Neglecting or resisting the natural impuls for the bowel movement is a frequent cause of constipation amongst offis men, clerks and women.

The fecal matter accumulates in the sigmoid flexure until conditions favor the bowel movement, when it passes down into the rectum and the desire for evacuation is felt. If the call is not heeded, a reverse peristalsis comes on and the fecal mass is lifted back into the sigmoid flexure. This process may occur many times but eventually the mucous membrane loses its sensitivness and the muscular coats their tonicity, when impaction of the sigmoid and rectum occurs without creating a desire for stool.

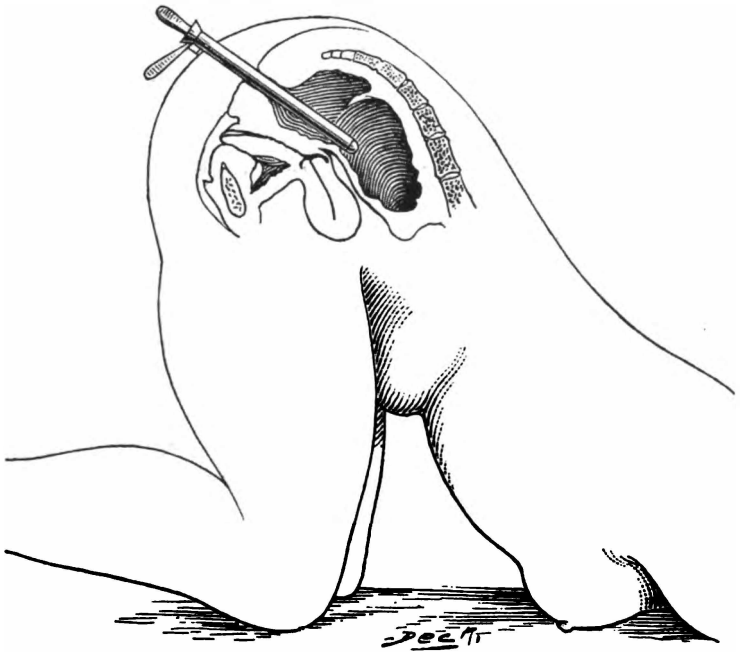
Attending such constipation, we always find inflammatory trouble of some kind, the heat from which tends to dry the fecal mass stil more until it presents the appearance of having been burnd.

Examination of the Colon

The sigmoid flexure and rectum combined hav a total length of from 26 to 28 inches. In order to pick this up on a 12-inch instrument so that the whole area may be examind, there is required a degree of skil and a sense of touch that can be acquired only by experience. A little preliminary training in the tecnic does wonders in the way of establishing confidence in the beginner.

When an examination of the colon has been decided upon, it is always wel to instruct the patient to avoid all laxativs for 24 hours prior to such examination. He may be advized, however, to clean the colon with a copious enema of soapy water three or four hours in advance of the time set for the examination. This wil allow sufficient time for all excess fluids to be absorbd and out of the way so they wil not interfere with the work.

The enema to be effectiv should consist of not less than two quarts and better stil three quarts, and the water



(From Bodkin's Diseases of the Rectum, E. B. Treat & Co., New York City.)

Fig. 287. Showing the Nee-chest position and the proctoscope *in situ*.

should be at a temperature of 115° F. to 130° F. In cases of impaction the enema may hav to be repeated two to three times a day for several days.

The patient should be instructed to assume the nee-chest position (Fig. 287) or to lie on the right side with the hips wel elevated. The douche bag should be suspended about two feet abov the anal opening, which wil insure a

slow delivery of the water with much less likelihood of bringing on spasm of the colon muscles and a premature expulsion than if suspended higher up.

The use of the enema is a precaution that is not necessary in every case as we more often find the colon empty of fecal matter than otherwise; but when we do find the sigmoid and rectum fild up or impacted, they must be cleard before a satisfactory examination can be made.

The necessary offis parafernalia consists of a suitable chair or table comfortably cushiond, with an irrigating device attacht that can be raisd or lowerd to accommodate conditions. The irrigator should be an ordinary four-quart percolator with hose attachment.

Two sigmoidoscopes 10 and 12 inches in length (Fig. 285), ar required. The latter should be supplied with a window and pneumatic device for inflating the gut with air (Fig. 286), which greatly facilitates the passage of the

Fig. 288. The long aluminum applicator used for high colon work. Notis the threds cut into the rod and notis how the cotton is rold on so it cannot come off.

instrument in difficult cases. With care and skil, the instrument can be past entirely thru the sigmoid flexure and a portion of the descending colon can be brot into view. (Fig. 287).

All first-class instruments ar now illuminated with delicate electric lamps which illuminate the distal end of the scope perfectly (Figs. 285, 286).

A number of aluminum wire applicators with a ring on one end and thredded at the other (Fig. 288) so as to hold firmly a bit of absorbent cotton ar better than the old wood applicators, as they are ligher and stronger and can be sterilized as often as desired. They also hav the advantage of being much cheaper than wood. They ar used in making application of such medicaments as ar nec-

essary, to absorb any excess fluids, and to serv as a guide in the further passage of the sigmoidoscope. A little experience wil enable anyone to wrap the cotton so that it cannot pul off and so that wire cannot be pusht thru the cotton and injure the intestin (Fig. 288).

The Ireland scoop-curet is also a necessity in removing any bits of fecal matter that may obstruct the view, and to curet any points of ulceration that may require such treatments (Fig. 289).

One or more soft rubber colon tubes with an eye near the end to insure flexibility ar also necessities. In selecting these tubes, care must be taken to select those of good quality, which ar flexible and soft, lest they injure the bowel.

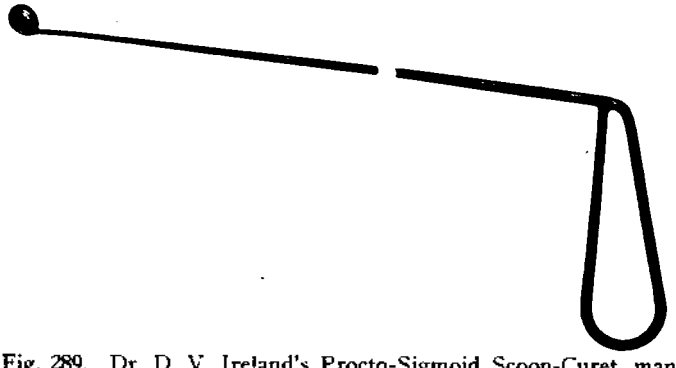


Fig. 289. Dr. D. V. Ireland's Procto-Sigmoid Scoop-Curet, manufactured by I. W. Long, Columbus, O. This Scoop-Curet is superior to the other kinds on the market.

In giving treatments, these tubes ar past thru the sigmoidoscope and beyond the reach of the scope, and with a "matchless" syringe the medicins selected may be forst as high in the colon as desired.*

A DeVilbiss insufflator (Fig. 290) is a convenience when it is desirable to use a powder of any kind rather than a fluid.

Passing the Sigmoidoscope

Always test the lighting device before attempting to pass the instrument to see that it is in good working order.

*As some difficulty may be experienst now in procuring the "Matchless" syringe, I might say that the "Empire" is probably the next best. The most simple of all, tho not as convenient, is the "Asepto Plungerless" syringe.

With the patient on the table in the genu-pectoral position (Fig. 287), the back dropt as much as possible in the lumbar region and the instrument wel annointed with "crisco" (which by the way is the best lubricant for all instruments that I hav ever found), start the instrument with the obturator in position pointing toward the umbilicus.

Press it gently and slowly until the sfincter muscles hav been past. Then turn the point of the instrument toward the promontory of the sacrum. Then continue upwards until the point is opposit the third sacral vertebra, when it is turnd slightly to the patient's right for a distance of about two inches, when, with the removal of the obturator, the proctosigmoidal opening should come into the field of observation.

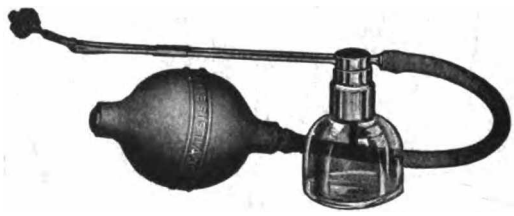


Fig. 290. An Insufflator useful in Rectal work.

Now with a rotary movement the instrument is carried thru the loop of the sigmoid. Should you find this more easily said than done, don't lose hart, as the writer has "swet blood" on more than one occasion—all for the want of a few pointers which he was unable to secure.

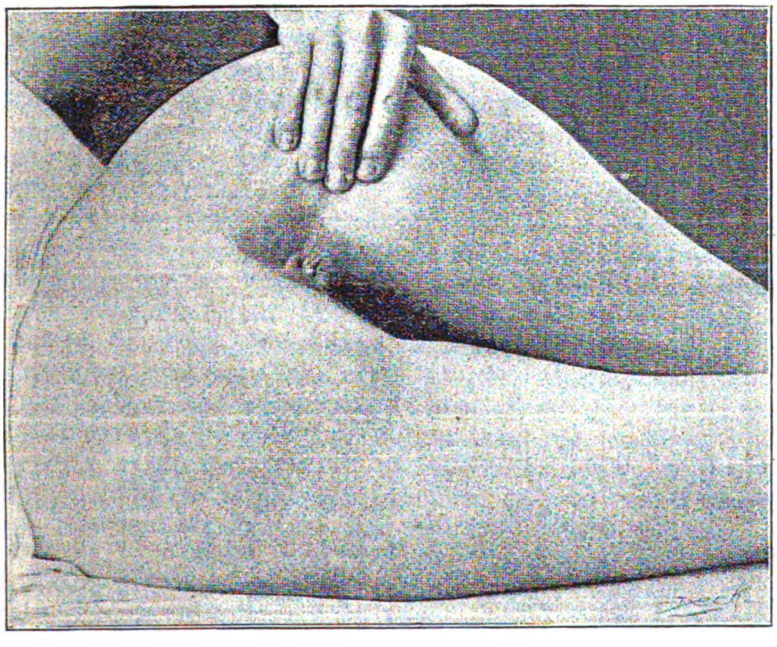
Never use force in passing the sigmoidoscope any more than you would in passing a catheter, lest you rupture the bowel and your reputation at the same time. With reasonable care, the operation is devoid of any danger.

In treating diseases of the colon and rectum (the latter being only a continuation of the former), there need be no guess work. You need not take anything for granted. With the tecnic of the sigmoidoscope once masterd, every bit of the mucous coat of the sigmoid flexure can be brot plainly into view. Any pathological condition found can be accurately diagnosed and treatment applied directly to the

affected area. The progress of the case can be watcht and the treatment varied accordingly. (Fig. 291 shows the Sim's position which can sometimes be used. Notis how patient can help expose the anal region.)

Pathology of the Colon

As brevity is one of the prerequisits of this lecture, it is necessary to discuss only a few of the more important diseases found in the colon; but sufficient to impress my



(From Bodkin's Diseases of the Rectum, E. B. Treat & Co., New York City.)

Fig. 291. "Sim's position" with patient assisting in exposure of anal ring.

readers with these salient facts which I hav tried to make the keynotes, viz.:

That auto-toxemia is the cause of most human ils.

That the focal point of such toxemias is more often found in the colon than elsewhere.

That when a fysiological condition is restord to the colon, our patients get wel, regardless of what the disease has been cald.

Cronic Hypertrofic Colitis

Mucous colitis, membranous colitis, cronic colitis ar all synonyms and used to describe the hypertrofic form of cataral colitis. It consists of a hypertrofy of the glandular and submucous tissue.

The subjectiv symptoms vary greatly. While some wil suffer from a cronic diarrea, most cases ar attended with constipation. There is usually some tenderness to pressure along the line of the colon. The greater tenderness is found opposit the points most affected, which ar usually in the sigmoid flexure.

Cases attended with diarrea complain of sharp, cutting pains before the bowels move, the stools consisting largely of mucus mixt with fecal matter and generally very offensiv. Frequently some blood wil be notist in the stools, which denotes ulceration. There is generally distension of the colon with gas with much borborygmus. The movements ar quite frequent and very urgent, owing to the weakend condition of the sfincter muscles and the irritating caracter of the fluid stools. These cases wer very common in my erlier practis amongst the veterans of the Civil War. Now, however, they ar more conspicuous by their absence.

Constipation is found with much greater frequency, owing to the great change in diet and our ease-loving habits. The stools ar dry, hard, and in little round balls resembling buckshot. There is mucus in varying quantities, from a slight trace to large amounts, sometimes exceding a pint in quantity. The mucus may pass at the same time with the feces or entirely apart from any fecal stool.

The color of the mucus is diagnostic of the location of the trouble. If it is clear or only slightly colord with fecal matter, you wil know the cataral trouble is in the rectum or lower colon. If greatly discolord, we know the trouble is higher up.

Such patients always show some degree of auto-intoxication. They ar more or less emaciated, owing to the duration of the trouble. There is indigestion with fitful appetite. The sleep is broken and the patient feels generally indisposed. The breth is foul and accompanied with a bad taste in the mornings.

With the sigmoidoscope the diagnosis is cleard up at once. The mucous membrane shows a cronic state of inflammation. The color varies from a fiery red to a dark

purple hue resembling gangrene. The membrane is thickend in some cases to the extent of giving to the bowel a sausage-like appearance. The membrane may be dry or flooded with mucus. Frequently the mucous membrane is detacht from the muscular coat, when it slides down presenting the corrugated appearance alredy described.

Attending such cases we generally find an extreme pruritus ani with an eczematous rash all about the anal region. This observation led me to the conclusion that nearly or quite all cases of eczema and kindred skin affections ar toxemias; and the skin, being one of the great eliminating organs, is kept irritated and poisond in its effort to free the blood from its overload of toxins. In confirmation of this theory we hav the evidence that the eczema disappears when the colon is restored to a state of helth.

Atrofic Cataral Inflammation of the Colon and Rectum

This is caracterized by the thind-out, almost transparparent mucous membrane. It may be so denuded of its glandular structure and connectiv tissue as to make the underlying network of blood vessels plainly visible. The surface is necessarily dry, owing to the absence of mucus-secreting glands. It may be smooth and glistening or ruf and granular. On the introduction of the sigmoidoscope, the air pressure balloons the gut to such an extent as to cause one to fear it might rupture, and so distorts the bowel that the instrument is past with great difficulty, if at all.

The etiology of this condition is usually a neglected or badly treated case of hypertrofic cataral colitis ingrafted upon syfilis. The syfilis may be hereditary or acquired. Other causes ar constiutional weakness combined with bad environments, overwork, bad ventilation, improper feeding, etc.

Constipation is a natural consequence owing to the lack of mucous secretion and the weakness of the muscular coats of the bowel. The stools ar dry, hard and lumpy with a little mucus or blood as a frequent accompaniment.

The anal margin is usually fissured and the fissures ar slow to heal, owing to the low state of vitality.

These patients suffer from indigestion and flatulence, ar languid, emaciated, nervous, and subject to insomnia. The condition is incurable but under proper treatment the patient's life may be made much more bearable.

Fortunately this extreme condition is much less commen than the hypertrofic variety which yields promptly to wel selected treatment.

In addition to the cataral diseases described, the colon is subject to any and all other diseases that attack the mucous membranes in other parts of the body—tuberculosis, syfilis, ulcerations, gonorrhea, cancer, erysipelas, diftheretic inflammation, etc.

Treatment of Colon Diseases

In the treatment of all colon diseases the diet should be lookt after with care. It must be as nutritious as possible in order to sustain the patient while undergoing his treatment.

The foods should be of such caracter as ar most nutritous, easily digested, and not be productiv media for the development of bacteria. Therefore foods containing much starch or sugar should be prohibited.

Coffee, tea, cocoa, chocolate, and all condiments ar only mentiond to be condemd. Coffee tends to produce inflammatory diseases of the rectum with much pruritus.

One of the best articles of diet is cream diluted with two parts of pure water—a glassful of this mixture to be taken every three to four hours. Egs, nearly or quite raw, ar another excellent nutrient. Undiluted milk is not good as it constipates the bowels and forms large, hard stools which irritate the inflamed mucous membrane.

Fruits not too acid, such as prunes, dates, figs, and raisins ar not only nutritious but tend to relax the bowels.

Internal Medicins

Bodkin suggests "creosote-carbonate as being an excellent remedy in colon diseases on account of its bacteriacidal effect. Bismuth, zinc-sulfo-carbolates, salol, beta-naftthol, and ichthyol all tend to arrest fermentation."

Calcium sulfid is excellent when there is much eructation of sulfuretted hydrogen gas. Here it acts like magic.

Every physician must be a law unto himself however in the treatment of colon diseases, and perscribe the indicated medicins to the best of his ability. Many cases that hav been over-medicated ar better without drugs in the stomac. The indicated homeopathic remedy should never be forgotten.

Local Treatment

Before attempting to use any local treatment, it is necessary to clear out the colon thoroly. This is best accomplisht by the use of enemas of hot, soapy water. The temperature should be from 115° to 130°. With the patient in the Sims position (Fig. 291), lying on the *right* side with the hips wel elevated and the fountain suspended about two feet abov the anal opening (which wil insure a slow delivery of the water), the average patient wil take from two to four quarts of water without much complaint. Some patients prefer the genu-pectoral position (Fig. 287), which is equally good as far as results ar concernd.

After retaining the enema as long as possible, the patient is instructed to arise and use the commode.

In the use of these clensing enemas, it is very necessary to observ the precaution of using the water *hot*. The heat acts as a tonic to both the mucous and muscular coats of the bowel, while water at a temperature of 90° to 100° tends to relax and invite dilation of the colon, which must be avoided.

Cathartics, lâxativs, and the much vaunted mineral waters ar not only useless but positivly harmful. They irritate the mucous membrane of the colon and the excessiv stimulation of the mucous glands is always followd by a period of inaction which brings about a condition just a little worse than we started with.

The enemas should be used daily until the colon is quite thoroly cleard of all ancient fecal matter, mucus, etc., when we ar redy for the second step of the treatment.

Local Medication

Since the time of Hahnemann *krameria* (ratany) has been regarded as almost specific in the treatment of colon and rectal diseases, due perhaps to the tannic acid it contains more than to any other principle of the drug. I use

it prepared after the original formula of Dr. Miller, which is as follows:

Macerate one pound of krameria bark in a long percolating tube for twenty-four hours. After this a mixture of 20% glycerin and 80% water is allowd to percolate thru it. The percolate should be constantly stird and refilterd thru the bark a second time. The filtrate is then evaporated down to one pound, thus attaining an aqueous fluid extract containing grain for grain all the therapeutic properties of the bark. The preparation should be kept in a dark place and not exposed to the air.

In the treatment of *cronic hypertrofic cataral colitis*, this is the remedy *par excellence*. The fluid extract should be diluted with from three to four parts of water and applied to the mucous surface thru the sigmoidoscope by means of the aluminum applicator (Fig. 288), making the application at any and all points needed as the instrument is past. When the sigmoidoscope has been past as far as possible on any occasion, a soft rubber colon tube is then past thru the sigmoidoscope and carefully carried some inches beyond, when with a "matchless" syringe an ounce of the solution is forst thru the tube, thus medicating the colon and preparing it for further entrance of the sigmoidoscope at some future time. Treatment should be given two to three times a week as occasion requires.

In very sensitiv cases I hav found the commercial extract of witch hazel or Pond's Extract, to act better than the krameria solution.

Tannic Acid

Where there is much mucus in the colon with hard, lumpy stools, tannic acid wil often yield more prompt results than any other drug. At each seance I pass the sigmoidoscope as far as possible and with a DeVilbiss insufflator (Fig. 290) I blow the powderd acid into the colon as I withdraw the instrument. I hav never seen the tannic acid recommended by any other writer, but I find it a most excellent treatment.

Local irrigation of the entire colon may be easily accomplisht if the preliminary irrigations for clensing the colon hav been faithfully carried out. Where the patient cannot come to the offis for treatment, much can be done for his comfort by having him use one to three quarts of

any of the abov solutions daily and less frequently as he progresses.

Cronic Atrofic Cataral Colitis

Here a *constitutional* treatment directed to the underlying cause should always be instituted. As these cases ar so often of syfilitic origin, the iodid of potassium may prove an excellent remedy.

The *iodin therapy* described by Dr. White is very beneficial.

Syrup of hydriodic acid is another excellent preparation. The glycero-fosfate compound or syrup ferri-iodid ar all worthy of consideration.

The diet should be most nutritious and of such caracter as to keep the bowels open. Sweets and starches, on account of the tendency to fermentation, should be avoided.

To relieve the fissured condition around the anal margin, the nitrate of silver in 12% solution, or even the pure stick, is perhaps the best remedy. Ichthyol is also good. Some hav success with carbenzol (Abbott).

Pruritus is often present in these cases, and is best relievd by training the colon and rectum to overcome the irritating mucous discharges which ar responsible for the pruritus.

Prolongd irrigation daily of the colon and rectum with a return current irrigator, using plain water *hot,* affords much relief.

Other cases wil respond more sharply to irrigation with a 1/2,000 to a 1/5,000 nitrate of silver solution, or 20% solution of the aqueous extract of krameria.

The krameria solution applied thru the sigmoidoscope in 20% solution is better after the use of the hot irrigation with steril water.

This condition is not curable but under intelligent management life can be made much more tolerable.

Ulceration of the Colon

Ulceration found in the colon as wel as in the rectum is best treated by keeping the bowel empty by hot enemas and the application to the ulcer thru the sigmoidoscope of a 12% solution of nitrate of silver from one to three times a week. This I hav found practically specific.

Stricture of the Colon

This is of more common occurrence than is usually supposed. It is best treated by gradual dilatation thru the sigmoidoscope with the Wales' bougie (Fig. 292). This must be done with great care and should be used in connection with any other indicated treatment to the parts affected.

If a cronic cataral condition accompanies the stricture it should be treated as indicated under that hed.

The Quartz Light

For local treatment about the anus and lower rectum —pruritus, ulcers, boils, acne, eczema, etc., probably the Quartz Light thru suitable lenses is the latest and most efficient fysical remedy. Some say it is specific.

In writing on this subject, I hav purposely omitted all reference to disease of the rectum—not that I feel that they ar not worthy of the most profound study and attention, but because so many volumes hav been written upon

Fig. 292. Wales' Bougie.

the subject of "rectal disease," all of which hav either ignored the colon and its diseases or hav been content to giv them a passing reference.

Diseases of the rectum ar of secondary importance to those of the colon as they ar usually dependent upon some colon pathology for their cause. The rectum should be regarded as a part of the colon, which it really is; and its diseases should not be lookt upon as a separate specialty, for the reason stated—that rectal diseases ar usually the *result* of some pathological condition found in the *colon* and generally disappear when the colon condition has been corrected.

THE FEET

As I wanted to giv my readers the VERY BEST information on this most important subject, I requested Dr. Cole to write this article. His long experience as an orthopedic surgeon and designer of special shoes for all foot troubles make him especially fitted to talk on *"faulty feet."*

The fact that so many men ar rejected from military servis because of "bad feet," makes this article all the more pertinent at this time. The title of the article is mine, as Dr. Cole left that for me to supply.

FOOT FITNESS
or
Faulty-Foot Foundation vs. "Flat Foot"

By HARLAN P. COLE, M.D., New York City.

It is said that a "soldier is only as good as his feet," and as we ar all "soldiers" in a way, and as *efficiency* is the cry of the day, and as every act of efficiency really goes back to the feet, we might say *we ar only as efficient as our feet.* It is quite difficult to tel in about 2,000 words all that should be told on this subject, but here is what I hav selected for the occasion. If it is of value to the readers of this book I shal be glad.

During the past ten years the question of *fysical efficiency* has receivd more, and increasingly more attention than ever before, and fysical examinations hav been more frequent. As a result of these examinations, it is being discoverd that more than 75 per cent. of the scool children ar out of alinement and out of balance in some way, and very many of these hav acquired an actual deviation which can not be voluntarily overcome, and which is gradually developing into a real deformity. These deviations may appear to be located at many points in the body, especially

in the Spine, the Legs, and the Feet, and ar liable to be considerd as having developt out of some condition or disease located at the point where deviation is recognized.

While this may often be true, a further examination wil show that there ar other conditions which antedated that which is under consideration, and out of which it actually developt, and these ar usually *below* the one first discoverd. The further we carry our investigations the more we must be convinst that the *foot* is more frequently the point where the deviation began, and the point where its correction must begin. Altho the foot may not be the seat of the primary disease, or the point first affected by the disease, it is most frequently the point at which the departure began. This is due to its location, its offis, and its anatomy. The foot is to the body what a foundation is to a house, the point on which this house must depend for security, the resisting point on which all leg action must depend, and against which the force of all leg action is applied.

The foot is a composit structure, composed of a number of small bones definitly irregular in shape and situation, for the purpose they hav to serv, and to be eventually as light and strong as possible, and it may seem strange that, under all these conditions, it is seldom the location of a fracture .

Looking at the body from either side, we find that no two of its bones ar in direct alinement with each other.

The hed is oblong in shape, and the under surface of its rear third, not its center, rests upon the top of the spine.

The cervical spine makes a forward curv, the thoracic a backward, the lumbar a forward, and the sacral a backward curv. The pelvis, which includes the sacrum, is tilted forward at the top, thus bringing the top of the sacrum, to which the lumbar spine is attacht, wel in front of the gravity line, while the acetabula, into which the heds of the thigh bones ar articulated, ar located behind the line. The thigh bones ar not vertically placed when standing erect, but cross the gravity line so that the nee is in front of it, and, as the bone of the lower part of the leg is also obliquely placed, so that its lower end is behind the upper, it also crosses the line, and the foot, to which it is attacht is behind it, under the upper end of the thigh bone.

This produces a spring effect, the spine crosses the center four times, and each joint of the leg is on the opposit

side of the line from the one abov or below, but in each case the deviation is forward or backward.

When we come to the foot the change is lateral, that is, the point where the leg is attacht to the foot is over the inner margin of the foot, while the point where the heel rests upon the floor is under the outer margin of the foot. Each articulation dodges the gravity line, the line thru which the force of the body weight descends to the ground. *The framework is a spring.*

In order that the body may stand erect, or stand at all, a system of muscles is provided, of different bredth, length, and thickness to adjust and maintain the proper, and often the improper, relations between the different bones. They support the weight of the body, and any additional weight they may be cald upon to carry, and also hav to move the body or any of its members in any direction.

Altho all the bones in the body ar firmly held together by ligaments that ar so strong that they wil not break or tear even under a strain that is sufficient to pul off the processes at the ends of the long bones, they ar not capable of either producing or preventing deviation or deformity. It is the *muscles* that support the body and preserve its alinement, and it is thru the giving away of some one, or set of muscles, that some part of the body sags, leans or turns; and as the greatest force is exerted at the end of the lever, the point where the force meets its last resistance, the foot, is the point where the greatest force is receivd.

Looking again at the foot, we find the seven definitly irregular tarsal bones, bound together by strong inter-articular ligaments, and placed under the tibia, the principal leg bone, the one which carries the body weight. These bones ar fitted to the rear end of the metacarpal bones which extend forward to what is cald the ball of the foot. Here again the bones ar bound together by strong unyielding ligaments, but in addition, there ar a number of long and short ligaments which reach from the heel to the ball, and many points between, their fibers running in every direction. So thick and so strong ar these ligaments, that aside from the limited motion between the bones, which was intended to prevent the fracture that would inevitably occur if this portion of the foot wer only one bone, the length of the

arch of the foot does not increase, and the arch of the foot does not fall, or break down.

The common remark that the ligaments "wer all torn" when the ankle was spraind is almost invariably incorrect, tho it may ad to the gravity of the case, and account for the inability of the physician to get a good result. The foot never becomes "flat," the length and curv of the bony structure of the foot from the heel to the ball does not change, therefore all efforts to "push up the arch," or support the arch to prevent it from "falling" ar uncald for and useless.

There ar two conditions that account for the *appearance* which is cald "flat-foot." They ar first, the position which the whole foot has assumed, and second, the edema, and the inflammatory swelling which results from the strain of all muscles and ligaments, that must occur when the foot is trodden upon while in a position it is not intended to assume, but which it does assume under a pressure that the muscles ar unable to resist, or under a normal pressure that is too long continued. This abnormal position is made possible; first, by the fact that the rounded under surface of the heel bone is under the outer margin of the foot, and the weight falls on the top of its inner margin, and second, that there ar no lateral ligaments between the Astragalus and the Os-Calcis, or between the Tibia or the Fibula and the Astragalus. There is a central ligament between the Astragalus and the Os-Calcis, but the lateral ligaments extend from the Tibia and Fibula to the Os-Calcis, leaving the Astragalus as a roller-bearing between.

This givs greatest elasticity to the ankle joint, but the amount of mobility is limited by the number and location of the muscles extending from the leg to the foot which control the position of the foot as the reins control the position of the hed of the horse you ar driving.

The inner margin of the foot is supported by all of the flexor and extensor muscles of the toes—the flexors which hav their origin on the back of the leg bones from the nee down, and which extend downward and forward thru the space under the inner half of the Os-Calcis, and from there forward to the toes, and act as an elastic support to the inner margin of the foot, as the cables of a bridge which pass over the piers at each end support the center of the structure by being carried down under its central portion; also by the Tibialis Anticus and Posticus,

whose tendons ar wrapt around the inner margin of the foot, and attacht to the bottom of it. But as "continual dropping wil wear a stone," so continued pressure of long standing, and of over weight wil exhaust the power of the muscles, as wil also any wasting disease or fever, and the inner margin of the foot, deprived of its usual support, sags and rolls over toward its *inner* margin, the top of the foot being crowded over by the body weight, while the under surface remains where it was placed.

In the condition cald *"Flat-Foot"* the foot is *turnd inward, at the top,* not drawn outward at the bottom; while in the condition called *Club-Foot,* the foot is turnd outward, at the top, also by body weight pressure. The predisposing cause of "club-foot" may be either a weakness of the muscles on the outer side of the leg that support the outer margin of the foot, and the foot rolls over because the patient cannot avoid it; or it may develop out of a voluntary tilting of the stronger of two feet and putting more weight upon it because the other is too weak to do its half of the work, and thus one cannot do more than half without being tilted over, so that the weight falls more directly over its outer margin.

In both of the abov (opposit) conditions a change must soon be made in the placing of the foot upon the ground, because, as security of base is gradually reduced, the toe wil be gradually more and more pointed either inward or outward, depending on the side of the leg most involvd, but usually away from the weaker side; that is, the toes wil point outward when the foot rolls inward, and point inward when the foot rolls outward. This brings the weaker side of the foot to the front where it is under the watchful eye of the patient.

There ar a *few* exceptions to this rule.

When the balance is corrected, the weaker foot properly cared for, and greater security provided, the toe wil immediately begin to correct its position, the amount of the change of position depending on the amount of security, whether the patient is two years old or twenty, and whether his mental condition is normal or abnormal. The change is automatic and involuntary. If there ar many adhesions the change of position wil depend on the liberation of the adhesions, but the *effort* wil be made, and wil keep pace with its possibilities. It is seldom the case that both feet

ar equally affected in exactly the same way. There is usually a difference in degree, and the conditions ar often opposit. In all cases the stronger foot endevors to do the work the other is unable to do, and the opposit condition in this foot is due to the strain and the struggle. It is usually secondary to the other and it usually suffers more and is considerd the real sinner. The treatment must begin with the weaker foot that shirks and does not suffer so much; it must be provided with some means that wil enable it to maintain its proper level under the pressure of the body weight, and do its work in this position.

Any substitute or fixation device, or apparatus for tilting the foot into the opposit position, which would be a *mal*-position and just as much a handicap, wil only subtract from its alredy limited ability and leave it deeper in difficulty. Over correction is usually a failure, because it does not improve *mobility,* which is the avenue to ability.

Foot *troubles,* which ar almost always *secondary* to foot *deviations,* must first be provided with something that wil prevent lateral deviation, which is a turning of the foot on its long axis either inward or outward; correction leads to security and activity, activity promotes better circulation and development.

The foot cannot bend between the heel and the ball, and there ar no large muscles in the foot to exercize, therefore a flexible shoe does not make anything possible, but is an insecure base which allows the foot to be crowded out of position, and out of ability to do its work.

If one foot is weaker than the other, that foot wil turn, that side wil sag, and that hip wil be lower and flatter. The lumbar spine wil tilt toward the weaker side; the upper end of the spine wil tilt toward the opposit side; the shoulder over the weaker side wil be higher, and a spinal curvature wil develop (Fig. 298). The rolling of one foot only, accounts for the condition which is cald "short leg," and which can be corrected, as can the spinal curvature which it produces, by correcting the *rolling* of the foot. Thickening the sole of the shoe, on the side under the supposed "short leg" only ads to the trouble, and the shoe soon must be bilt stil higher. Stiffening the side of the shoe limits ankle motion. It is the *bottom* of the shoe that does the work, and this must be of such shape, bredth and

firmness, and be so placed that the foot wil be secure, and it wil do the rest.

The foot is usually the second factor in foot troubles, but it is the key to recovery thru adjustment and security.

The foot has an important bearing on deviation at the nee, such as nock-nee and bowed leg. The inward rolling, or pronation, of the foot tilts the nee inward and causes an inward lateral thrust of the femur at the nee joint, producing strain in the internal lateral ligaments, and increast pressure in the outer half of the joint, this leads to inflammation in and about the joint, which can only be relievd by squaring up the foot. If the foot is not corrected the patient wil make some voluntary effort at adjustment in the opposit direction, which eventually results in the production of bowed leg, and a somewhat backward deviation of the nee.

The prevailing difficulty of man-kind and woman-kind which is cald either flat-foot, weak-foot, pronated foot, or talipes valgus, consists in a *rolling of the foot toward its inner margin;* and from it and the adjustments necessary to promote better ability in walking, ar developt nock-nee, bowed leg, uneven or unlevel hips, and spinal curvature.

Deviation at any joint limits mobility, so varicosed veins, local adhesions, and atrofy, ar the next probability. Pain, local swelling, and edema may attend all stages. Correction and alinement ar the first requirements, and the treatment of local developments must follow. *Development wil be sure to follow if normal mobility is made possible.*

Pronated foot, "flat-foot," spraind ankle, Potts fracture, ar all brot about by *downward pressure on the top of the foot,* and a rolling of the foot toward its *inner* margin, the difference in condition depending on the amount and abruptness of the pressure, *their prevention consists in the prevention of the rolling,* and they ar cured in the same way, plus accessory treatment. An ankle may be spraind by turning outward.

The following 14 illustrations, reproduced from life, along with their captions wil explain the treating better than a more extended treatis on the subject.

Fig. 293

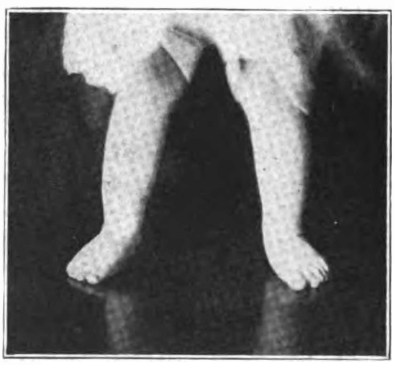


Fig. 294

Fig. 293—Fotograf of the bones of the leg and foot from the rear. A line drawn from the center of the top of the tibia, which is the weight-bearing bone of the leg, to the center of the lower end shows the os-calcis or heel bone located to the outer side of the gravity line. The line falls exactly at the point where the muscles which hav their origin on the back of the leg extend downward and forward under the tibia, os-calcis, and astragalus to the toes, and suspend the body weight at this point. When these muscles become weakend this point sags and the whole foot rolls inward and forward, and admits of pronation, inversion, talipes, straind ankle, Potts fracture, and the so-cald "flat-foot."

Fig. 294—Shows an infant with pronated feet attempting to stand, the feet widely separated and the toes pointed outward, to secure better balance, and a wider base for the foot. The greater pronation of the left foot lets the left ankle down nearer the floor, this also lowers the nee and the hip, and tilts the lumbar spine forward and to the left, which necessitates an adjustment of the thoracic portion toward the right, thus throwing the left shoulder upward. This would carry the hed to the right beyond the center, but it wil automatically come back to the center, for the chin must be over the weight-bearing point on the floor.

Many would say that the left leg is shorter than the right because the left hip is lower, but when the foot is in normal position, we find that the arch has not fallen, and the leg is not shorter.

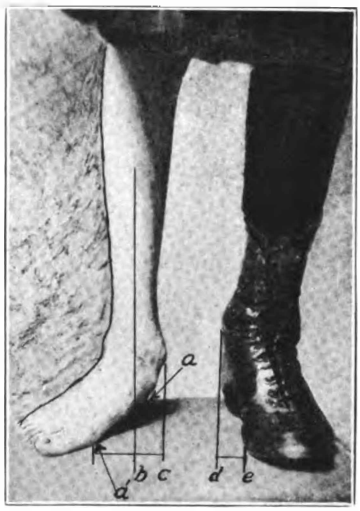


Fig. 295

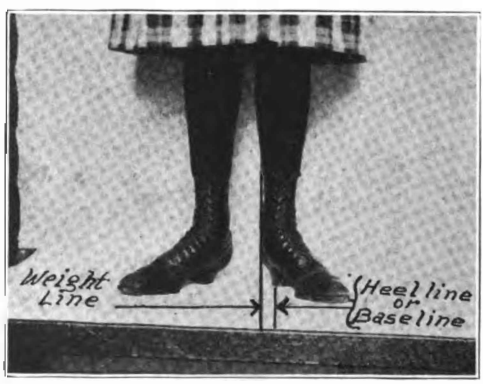


Fig. 296

Fig. 295—In this case we find a greater deviation, on the opposit side, more atrofy, greater difference in the distance from the maleolus—or ankle bone—to the floor, weight born mostly on the better foot with the nee carried outward beyond the foot. The condition of the spine the same as in figure 294, but in the reverse direction and more markt.

Fig. 296—Shows both feet involvd—or better—both sides, for the fault is in the legs, not the feet; but the left is not so good as the right. This difficulty was discoverd after an attack of tyfoid fever, the lowerd vitality bringing to light what had actually existed before, but had been overlookt.

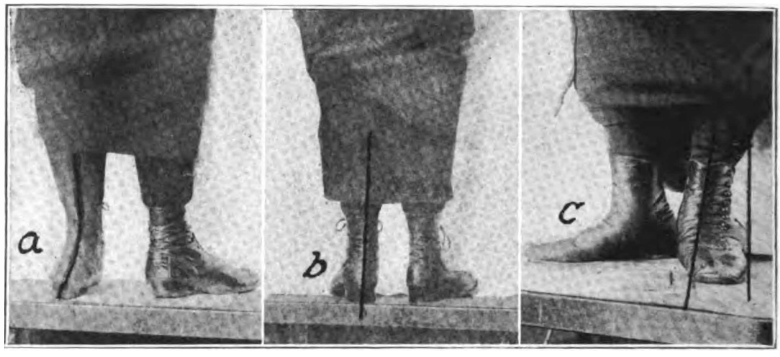


Fig. 297

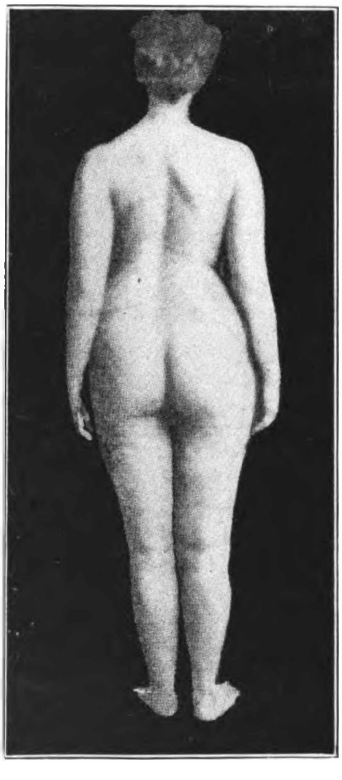


Fig. 298

Fig. 297—Shows both feet in about the same degree of difficulty; in *a* we see the condition; in *b*, the correction; and in *c*, the liability if not corrected. In the erly stages of "flat-foot" the nees tend toward each other until they bump at each step, but with decreasing ability and increasing deviation the nees must be puld apart so that they can pass, and bowed leg is the result. In this condition the thrust of the body-weight into the foot is obliquely downward and inward as shown by the oblique line on the left foot. This rapidly increases the difficulty, and the disability. The lady in *c* could not stand quietly long enuf to hav this picture taken without support.

Fig. 298—A case of moderate spinal curvature frequently found. This condition is adjustable if the patient takes the trouble, but as soon as the mind is otherwise occupied, or the eyes ar closed it recurs. The right hip is lower and flatter, the right nee lower and right shoulder higher. In the picture the lady has pusht the hips to the left, over the left foot, to get her balance on the stronger leg. Right leg edematous. Muscles of torso shorter on left side between hip and shoulder. Right foot pronated. Right side weaker.

The reverse side of the difficulty is shown in the succeding pictures.

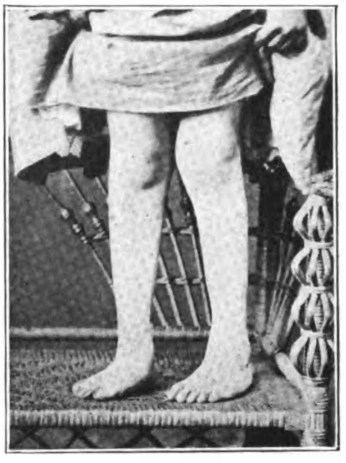


Fig. 299

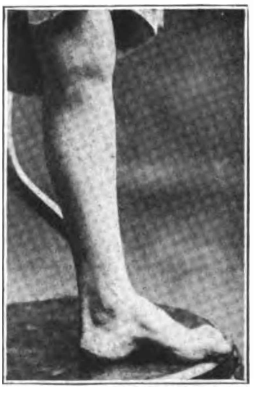
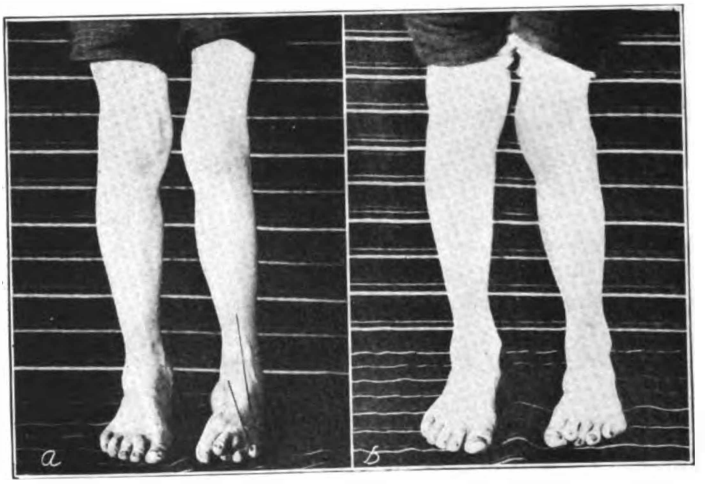


Fig. 300

No. 299—Shows the left foot and leg slightly involvd, with an *e*-version of the foot, that is, the top of the foot is pusht outward under the downward pressure of the body weight. On account of the uncertainty of the balance in this foot, its toe-end is pointed inward, toward the other foot, and the other foot is pointed outward, and rold inward, because the body weight has been shifted more to that foot, it being the stronger side of the two. Both nees lean inward, the left, as usually occurs in these cases, to compensate for the outward rolling of the foot, and the right goes with the foot in the beginning of the difficulty.

Fig. 300—An older patient, with more vitality than Fig. 299, but stil a lack of balance. The foot shows the amount of struggle of the leg muscles to maintain balance, and the consequent fore-shortening of the foot, and retraction of the toes into the position that I call "*Gunhammer.*"



A Fig. 301 B

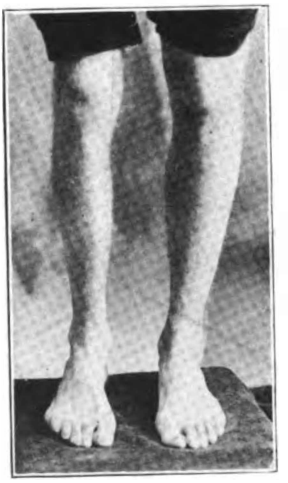


Fig. 302

Fig. 301—A stil older case, the left foot showing more turning toward the outer side, with inward leaning of the nee, and here an elevation of the heel in *a*. In illustration *b* we see a wider foot, and lower heel, and that the weight falls more directly over the foot, after wearing a correctiv shoe for three months; the posing and size of picture as nearly alike as possible.

Fig. 302—Shows an adult case similar to Fig. 301 but with a little less deviation. We find here the same inward tilt of the nee to get the weight more squarely on the bottom of the foot, while on the other side we find an outward tilt of that nee to overcome the disposition of the foot to roll inward, or the better to pass the right nee which leans toward it.

Fig. 303

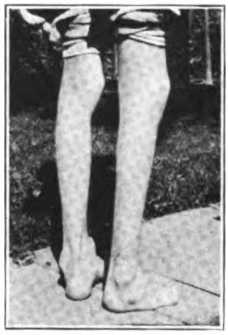


Fig. 304

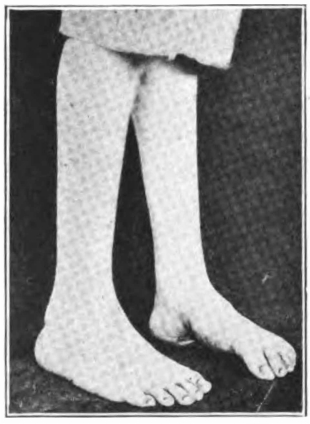


Fig. 305

Fig. 303—Illustrates the appearance of such feet in shoes, the one bulging the side of the shoe on the under side, and the other on the inner side, also the automatic tilt of the body toward the stronger side until the weight is perfectly balanst; a position which re-adjusts itself as soon as the weaker foot is corrected, and placed in position to do its half of the work.

Fig. 304—Atrofy, Retraction, Deviation, Flexion at every joint in the legs and torso to balance the body on its tottering foundation. The fall must be soon.

Fig. 305—How much has been accomplisht by this deforming and useless operation? All that could be gaind in position would be to prevent tredding on the outer margin of the foot which is painful, but the arrest of growth in the foot and leg, more than counterbalances all improvement in position.

Fig. 306

That short leg can be acquired without change in the length of any of the bones, as compared with the other leg and also without deviation of either foot, is wel shown by Fig. 306. This young lady, aged 17, is the dauter of people wel situated, socially and financially, and near enuf to New York and Boston to get any thing needed, and has an uncle who is a physician, in New York City.

In childhood she had a long ilness. After her recovery it was notist that her left leg was shorter, and she leand to the left at each step on the left foot. A special shoe was made with cork enuf to take up the difference so that she walkt evenly. After a time it was notist that her difficulty had returnd, and the thickness of the cork was increast with the same result that followd the first adjustment, but again the difficulty returnd. Again and again the thickness of the cork was increast until when I saw her, the cork in the shoe shown in the fotograf was 6¼ inches thick at the heel, and 5¼ at the ball of the foot.

The more the shoe is bilt up, the faster the leg shortens.

She is in good helth and a good swimmer.

I told her mother I would hav to reduce the thickness of the cork before I could accomplish anything, but as that renewd the tipping toward the shorter side at each step her mother refused to go on with the treatment.

The beginning difficulty in this case was flexion of the thigh upon the pelvis, which would not allow the femur to be carried as far backward as the other at each step.

When the sole of the shoe was thickend, the leg was made shorter, and the muscles at the front of the thigh adapted themselvs to that position, as they had before.

In eight cases out of ten the shorter leg is either flext at one or more joints, or the foot under it is rotated on the long axis either inward or outward. If flext the muscles hav adapted themselvs, and become adherent in that situation, and the correction must come thru liberation of the adhesions.

If the foot is rotated, correction of position thru the bottom of a shoe is the remedy.

Tearing adhesions results in the production of more. Braces or casts, or any form of lateral pressure on the sides of the leg result in disuse-atrofy, and adhesions.

SERUMS AND VACCINES

By the time my readers hav reacht this part of the book, they wil know what I think of vaccines and serums. Putting diseasd material into a wel animal and then taking from that animal diseasd material to put into a wel person to "make him sick to keep him wel," seems to me as contrary to nature as any procedure can be.

There ar other ways of helping nature. In fact, I do not believe that the ordinary vaccine and serum treatment, as it is given so universally today, is anything but a detriment to the patient in the long run. (Notis that I say *in the long run.*) Eventually if there is any latent weakness in the body, it comes to the front when it would not but for this promiscuous, unscientific and unnatural practis.

Worst of all, it seems as tho *commercialism* wer vaccine's greatest potency. It is wel known that fortunes ar being made by promoters and their aids in vaccine and serum therapy. No doubt there wil be a great change in this respect and vaccine and serum treatment, as popularly given today (and I might say that is legalized) wil be lookt upon before many years as an act of barbarism.

When I told some of my fellow physicians that I was to hav a lecture in this book on "Autotherapy" they seemd shockt and askt what had come over me. I told them that they did not understand what *Autotherapy* was or they would not be surprized.

I then related that when I was a boy I saw one of our calvs with a sore on its back. My father did not do anything for the sore but let the calf run with the mother and suck as usual. The cow lickt the sore on the calf's back many times a day. My father said that would cure the calf thru the mother's milk. This was long before any of these systems wer known about.

I also told how a dog or fox or raccoon, if injured in the foot, would lick the sore continually, and if they could

not lick it, they would get into the mud to get the sore wet; but licking was the principal remedy used by any animal on any sore it could reach. The popular idea used to be that it was the saliva of the animal that helpt this condition, but little by little we lern that it seemd to be something more than that.

Woodsmen ar told that if they ever injure themselvs or ar bitten by a snake, to suck the wound; and I hav seen many persons get along without any "post-injury" effects by carrying out such a procedure.

This method of treatment is Autotherapy, so named by Dr. Charles H. Duncan of New York City. It is that method of Serumtherapy that I believe in and no other.

There is another extreme, however, that seems to be far-fetcht. The fact that the mother's milk wil help cure a child of a running sore (if she sucks the sore) has led some to say that if you feed a tuberculous child with milk from a tuberculous cow, it wil help cure the child. They do not realize that a cow and a human being ar different. What is good for the calf thru the cow's milk is not necessarily good for the child. Right here I might say that is where I think "laboratory investigators" in this animal therapy work ar way off the natural road. What is inherent in a chicken or a dog or a cow or horse is entirely different from what is inherent in the human family. *I believe each specie is a law unto itself.*

At the present time and for some years past, there hav been all sorts of blood treatments and vaccine treatments palmd off on the public. I do not think there has been any remedy so faked as the "blood remedy." If any good has come from "blood treatment" thru subcutaneous injections (or what I think is criminal—intra-venous injections), it is simply following the work of Dr. Duncan in his Autotherapeutic work.

I hav a good deal of sympathy for Dr. Duncan because of the way every original worker is condemd by his jelous confrères. I also sympathize with him in the fact that fakirs and impostors wil try to copy one person's work and put it out under a different name or different clothes as their own. From all the records I can find, I believe that Dr. Duncan was the originator of this system at the present time, altho it is putting in different shape what has been practist for thousands of years. It is very difficult to find

anything new under the sun. Autotherapy in a crude and natural way has been used for centuries, some writings on the subject going back to about the year 1100. But it was not systematically used and no fundamental principle was workt out. This I believe Dr. Duncan was the first to do and I think my readers wil derive much benefit from reading this lecture on Autotherapy by one whom I consider an honest, hard working man.

The fact that Dr. Duncan for years has publisht his whole theory regarding this work and his exact tecnic, proves him to be very altruistic—a little different from some others who hav really copied his work and charged a large price for teaching it to those who thot they wer getting something different.

I am fully in accord with Dr. Duncan when he says that incubating blood and putting it back into the veins is a dangerous procedure. I hav seen some very disastrous results following such work, and that makes me all the more in accord with the simple way in which Dr. Duncan carries out his work, which seems to be as near the natural way as possible.

AUTOTHERAPY

By Charles H. Duncan, M.D., New York City

Autotherapy is the physician's method of treating the patient with *unmodified toxic substances* elaborated within the latter's body by the action of the infectious agent on his body tissues, against which the tissues react in a curativ manner.

Briefly stated, Autotherapy is a method of treating the patient with unmodified toxic substances elaborated within his body during the course of the disease. It is elementarily simple in its application—far-reaching in its effect, and the principle on which it rests so sound that it might with propriety be cald, *"The Basic Principle of Therapeutics."*

It has its roots reaching far into the distant past and deep into the texture of our very being. As we trace the path of ancient medical thot on down thru the ages, we find it leads unmistakably in but one direction and that is towards *autotherapy*. The whole trend of modern, medical thot is in but one direction and that is *toward Autotherapy*. Autotherapy is the culmination of vaccine therapy and the glorification of Homeopathy.

The name Autotherapy means *self therapy*, or self preservation. So in reality in autotherapy we ar considering a new application of the First Law of Nature—Self Preservation.

Dr. George F. Laidlaw, Professor of Medicin at Flower Medical College, New York City, says, "Autotherapy is the conclusion of the work of Pasteur, Koch, Hahnemann, and Wright with his vaccines—it is merely one step forward in the regular development of bacterial therapeutics. Dr. Duncan has solvd a problem that has been germinating in medicin for over a thousand years." It is endorst in the highest terms by the deans of nine leading medical colleges. The Veterinary Medical Society of the County of New York, at its regular February 15, 1914, meeting, past resolutions unanimously endorsing autotherapy in the highest terms, and elected the author an honorary member of their society as an expression of their high

appreciation and gratitude for the success they ar having in relieving and curing infections in animals by means of autotherapy. In fact, the veterinary physicians ar unanimous in vouching for the specificity of autotherapy. The bibliografy of medical articles givs a comprehensiv idea of the subject. But in order that we may hav a clear conception, or an understanding of its clinical usage, and of the principles that underlie the cures made by its use, it is essential at the beginning of this thesis that a brief description be given of how autotherapy was discoverd. It wil then be seen that the application is obviously elementarily simple. And what a great addition it is to our armamentarium in fighting diseases; for it takes in practically all of curativ medicin and much that lies entirely without its border.

In December, 1909, there was brot into the hospital under my surgical servis a patient suffering with a compound fracture of both bones of the left leg, and also severe bruises and contusions all over the body, caused by being run over by an automobile. Infection set in and progrest in spite of all that could be done. When it became apparent that he could liv but a short time, the writer, as a last resort, decided to see what effect the animal method of placing the live, infecting micro-organisms from the wound directly into the patient's mouth would hav upon the course of infection. Accordingly a few drops of the discharge taken from the wound was placed in the mouth of the patient. Within two days the pus had entirely disappeard leaving granulations. The appetite improved, the temperature fel to normal, and he became cheerful and improved in every way. His friends then removed him from the hospital and he was lost sight of. This case set the writer thinking and he decided to make further tests upon apparently hopeless cases that came under his surgical servis. It was not long before he had an opportunity to make tests upon three severe cases of infections following accidental wounds. These wer treated in a similar manner and in each instance the former results wer confirmd. Pus by the mouth acts therapeutically at once, and the results tend to be permanent. Here was the first medical fact ancord and demonstrated. It appeald to some, however, as being particularly disagreeable, even tho its action is described by physicians employing this method in treating

themselvs to be—*"like magic."* The odium was intensified perforce, by those preferring to giv "pretty pink pils." However, the author believd that the "physician's first duty is to cure the patient," and rather than see them die when there wer means at hand that would save them, he persisted in the treatment.

In the effort to make a more elegant autotherapeutic preparation, a dilution of the pus was past thru a Berkfeld Filter and the efficacy of the filtrate tested both by the mouth and hypodermatically. This also was found to be effectiv when given in the manner described. Here was a second medical fact or stepping stone in the development of Autotherapy. With this beginning, it was not long before new and startling medical facts quickly developt, until the record of each day's work resembled in some respects the successiv editions of the daily press. Medical truths everlasting and immutable wer uncoverd daily. It then dawnd upon the writer that all localized infections hav a discharge and that the filtrate of this containd the unmodified toxins from all micro-organisms present in the focus of infection. I askt myself the question: "Since this treatment is so effectiv in purulent infections would it be equally efficacious also in other localized infections?" Then came busy days. In quick succession many infections wer treated successfully. Acute bronchitis, cured within twenty-four hours; neumonia and cerebro-spinal meningitis, mastoiditis, otitis media, acute gonorrea, cystitis, reumatism, etc., wer usually cured quickly; operations for appendicitis and sinus of the hed wer aborted and the curativ reaction was apparent often within a few hours, and it tended to be permanent. As one after the other of these infections wer conquerd it was realized that a great secret of Nature had been demonstrated beyond all shadow of doubt. As the data accumulated the writer began giving them to the profession. What concern of it was his if these physicians, who at first opposed autotherapy, wer forst to reverse their exprest opinions, or find themselvs alone in opposition to the truth! What cared he if surgeons at the hospital, thru petty jelousy, used their position and personal influence to obstruct his work! He persisted, nevertheless, in his tests and publications. The profession at large was attracted, and letters of congratulation and encouragement came pouring in from broad-minded physicians all over the world. Words of apprecia-

tion came from many Medical Missionaries. One from the Philippine Islands says,—"I am saving women from operation following gonorrea." Another says, (This is from Dr. G. Glass Davitt, of the Briton Corlies Memorial Hospital—West China Baptist Missionary), "I am using autotherapy extensivly out here 2,000 miles inland from Shanghai; it is revolutionizing my work; there is a world of truth in what you say; I am making a wonderful reputation for my great skil (?) in mixing drugs." Surgeons in India enthusiastically took up the work and publisht in the *Indian Medical Gazette,* able articles on the subject of autotherapy; relating prompt cures in otherwise incurable conditions. From the Portland, Oregon, General Hospital, came the words,—"We feel our patients cannot get wel nowadays unless we hav some autotherapy to offer them." Scarcely a month past but that several articles referring to remarkable cures made by autotherapy appeard in standard medical periodicals. Papers on the subject of Autotherapy wer read in Vienna, Budapest, Marietta and Cleveland, Denver, Omaha, Boston, Philadelphia, South Africa, China, etc.

After a most rigid investigation, the Homeopathic Medical Society of the County of New York, unanimously endorst autotherapy in the highest terms. Inquiries came from many physicians in Spain, Italy, South America, South Africa, France, England, Japan, Australia, etc. The odium was dispeld and the oposing forces brusht aside by sober medical opinion. But in every hospital where it is used for the first time, the conflict begins anew; "progression vs. pretty pink pils."

The filosofer is aroused from his dreams, for here ar new facts that do not fit his systemic order of things, but rather tangle his filosofy. Those who, on general principle, oppose anything that is new, found here an opportunity to voice privately their sentiments. It was only occasionally that one became so bold as to oppose it upon the floor of the county society. It was met with glum silence by physicians with whose specialty it interfered, and with jelous criticism in private.

Now what does this all mean? Why this odium, this enthusiasm, this filosofical entanglement, this opposition without investigating, this silent rage? To even a superficial observer it means that autotherapy marks a new era in

medicin. The hand writing is on the wall that has for each an almost individual meaning. If it means for you quicker cures, or less operations, the use of fewer drugs, etc., let us remember also that it means for humanity a blessing. And the world moves on. Times hav changed and the progression eventually wil adjust itself to the new order of things.

The main criticism of Autotherapy is—"There is no standard dose." When we get away from the idea of standardizing the dose we wil be in a better position to cure our patients. For *there is no standard dose any more than there is a standard sick individual.* With Autotherapy *we treat the individual,* according to his needs, *and not the disease.*

Another criticism of Autotherapy is—The diseases it is claimd to cure quickly ar often self-limited and no one knows but that the patient would hav recoverd without medication. In answering this criticism I would suggest that mastoiditis is an infection that often leads to a double operation. A list of mastoid cases that had been operated on one side, in which the symptoms of the disease on the other side wer relievd quickly by means of autotherapy, and the operation aborted, robs this criticism of any force. Curing bronchitis of years' standing within a few weeks by means of autotherapy, is a triumf. When the criticism is offerd by one with whose specialty it interferes, it is ridiculous and we can redily understand that the critic is speaking from personal grounds.

The Principle of Autotherapy*

The main thot to be kept in mind is that *the remedy comes from within.* The aim is to aid Nature in restoring the tissues, or in developing the resistance of the patient to his own poisons which ar being elaborated within his body during the course of the disease. The antitoxins of commerce ar developt in the animal in response to the injected filterd toxins. In a similar manner the patient develops antitoxins to his own (bacteria-free) toxins when his own filterd toxins ar injected subcutaneously. Autotherapy must be said to be a *natural process,* and the tecnic is adapted to aiding this process. This is accomplisht by

*First publisht in the *Medical Council,* July, 1916, republisht in the *Practical Medicine,* Delhi, India, March, 1917.

placing the unmodified toxin-complex in helthy tissues. The helthy tissues adjacent to the point of the needle tend to develop resistance to a non-fatal dose of any poisonous substances that ar placed within them; the resistance so developt, *i.e.*, the antitoxins developt in response to the action of the patient's own unmodified toxins on the tissues is the specific resistance to these toxins remaining in his body and to the micro-organisms from which the patient suffers.

It is wel known that about every pioneer in medicin who had the courage to express convictions at variance to those generally accepted, has been denounst and persecuted. Semmelweis claimd that the physicians themselvs in many instances, wer to blame for blood-poisoning attending childbirth. For this he was judged insane and lockt up in an asylum for twenty years where he died. One hundred years afterwards a monument was erected to his memory in Vienna. Hahnemann was driven out of many cities in Europe, his books burnd and his drugs thrown into the gutter, til a Polish Nobleman rescued him. He is the father and founder of Homeopathy. The persecution of Jenner who discoverd the method we employ today, of vaccination against smallpox, was severe at first and it was not until shortly before he died that it was recognized. The persecution of Parecelsus and a long list of pioneers who dared to differ with the pet theories of men who temporarily held exalted positions and who assumed the role of virtuous infallibility, is wel known. Because a medical fact is new and not understood, and does not agree with our present accepted methods of treatment, is no reason why it should be denounst, especially, if a brief trial would convince any fair minded man of its great curativ value. This is forcibly true of autotherapy. It tends to be curativ in every bacterial infection, if properly administerd. The more virulent the infecting micro-organisms, the quicker wil be the response and cure.

Autotherapy is evolutionizing our ideas of medicin. The great social, political and geografical revolution that is now taking place in Europe, is the only thing that can be compared with the evolution that is now taking place in our ideas of medicin, as the result of Autotherapy. We believe, that is we in the profession who ar not blinded by ignorance or jelousy, believe that autotherapy is timely and should be welcomd by the profession for "mineral and vegetable

drug antagonism to disease has been weighd in the balance and found lacking." Even the laity has largely lost confidence in our method thru our inability so often to relieve their sufferings. This has led to therapeutic nihilism or discarding the use of drugs in our fight with disease. But *therapeutic nihilism must giv way to the thot that the purification of the body comes from within.*

"This treatment is based on uncommon good sense, and observations of facts, and agrees with practically all we know of biological therapeutics. Sick and wounded men and beasts largely recoverd from their morbid conditions long before medicin had a name or substantial reality. Whenever this occurs it must be considerd a triumf of the living tissues over the maline conditions and cause that besets it."*

This natural remedy belongs to the individual by divine right. While we physicians hav been serching the hevens abov and the erth beneath for a remedy to cure a patient suffering with infectious diseases, it is perhaps humiliating to be told that the remedy the patient needs, lies within his body, and the application is so simple we wonderd it was not discoverd long ago. It is the poisons develop by germ activity within the patient's body, to which we must develop resistance, this is obvious—with autotherapy we merely assist in developing the natural resistance of the patient to his own toxins, by filtering the pathogenic exudate, and injecting the bacteria-free immunizing filtrate subcutaneously.

Autoimmunization by Hyperemia—Hot Fomentations, Etc.

Clive Reviere says in substance, in the procedings of the Royal Society of Medicin, "Nature was the first therapeutist. B yarousing the natural defense forces from within, we assist Nature by Hyperemia, *First,* by irrigation of the infected area with plasma and leukocytes, *Second,* by washing the bacterial products into the blood stream to stimulate in the tissues the formation of new antibodies specific to the invading micro-organisms. We should allow time between our inoculation for the development of these antibodies. That is, we should direct this autoinoculation to

*Dr. James Law on Autotherapy.

maintain most successfully, toxic immunity. We need hardly fear to follow Nature's lead." Thus induced autotherapy is directed by the physician.

Moist Dressing

In the application of moist dressing to an infected area the parts become relaxt and flaccid, thus facilitating the escape of the toxins into the general circulation and there bild up antibodies specific to the patient's own infecting micro-organisms and their toxins, so the patient is autotherapeutically cured.

Radio and Electric Autoimmunization

There is but one conclusion at which we can arrive in considering the therapeutic effect of x-ray and high frequency effluves and that is we auto-immunize the patient to his own infecting micro-organisms, or it is another method of treating the patient autotherapeutically. For example, x-ray is applied to a crop of boils or acne on the back, when those on the face wer cured. The patient was auto-immunized. The same is true of lupus vulgaris and other skin diseases .

Dean Butcher in a paper before the Royal Society of Medicin, says, "One of the greatest arguments in favor of vaccinal hypothesis, is the *latent period* which follows Roentgen or radium irritation and which precedes the reaction."

"The ominous pause is to my mind eloquent and indicates that all of the resources of the organisms ar being cald upon to resent the insult. The reaction is not merely a fysical or chemical one but a *biological* reaction in which the energy of the reaction may excede the energy of the attack."

Much time must elapse before we can hope for practical means of producing or controlling autoimmunization by electrical means. Time and space ar not at our disposal at present to more than state that electric-thermo-penetration, the therapeutic use of deep sea water or pure steril water, ar one and all when they cure—simply autoimmunizing the patient to his own infecting micro-organisms.

In Homeopathy we giv a substance that produces symptoms in the comparativly helthy individual similar to

the symptoms from which the patient suffers. In autotherapy—the patient proves his own remedy; we giv the exact substance that causes the symptoms, *thus disease is a proving of its remedy* in the patient and the symptoms ar the result. The cure of disease consists in establishing resistance in the patient's body to his own toxins.

Autotherapy Tecnic

The general rule of autotherapy, given for the practical guidance of physicians is as follows: *The pathogenic exudate is mixt with distild water and allowd to stand from two to twenty-four hours, with occasional agitation, it is then past thru a Duncan Autotherapeutic Apparatus and the bacteria-free filtrate injected subcutaneously.*

A corollary to the general rule that is applicable to infections in no way connected with the alimentary tract or respiratory system is as follows: *The crude discharge may be given to the patient by the mouth in proper doses and at proper intervals between doses; disguised if desired, with cocoa or grape juice.*

Autotherapy is indicated wherever a vaccine is indicated; it is not dangerous—not so dangerous as the use of vaccines and sera now in daily use among us.

Allowing the pathogenic exudate and water to stand for a few hours with occasional agitation tends to break up the mucus and allows the toxins to go into solution by autolysis. Dr. Fenner first suggested that the unmodified autotoxins be mixt with water and incubated twenty-four hours before they ar employd. *This has proved to be a dangerous procedure, and should not be done, as the fermentation renders them positivly dangerous.*

*Even blood becomes dangerous when employd in this manner. The writer has long since ceast to employ blood when the pathogenic exudate could be obtiand.

Blood Tecnic

The tecnic the writer uses when employing blood is as follows: Under strictly aseptic tecnic 1 mil. (c.c.) of *blood serum* is mixt with 32 mils. of distild water, this is allowd

*The greatest evidence of the therapeutic value of the patient's own blood as a remedial agent lies in the fact that there hav been many fakirs who claimd they discoverd it without being on record in standard medical periodicals as having done so.

to stand at room temperature, for from six to twelv hours. If the room is warm, six hours is sufficient. (In the summertime six hours is sufficient). From 1 to 4 mils. of the mixture is then injected thru a smear of iodin, subcutaneously. Cronic cases should be given proportionally less. Within recent years, the writer has been filtering in the manner suggested before injection.

Blood as a therapeutic agent has been used since 1909. Since then, there is scarcely a subject in medicin about which more has been written. Many patients object to the hypodermic needle. By employing blister-serum obtaind from a cantharides plaster we ar thus required to use the needle but once. By the use of blood we employ it twice. It appears there is nothing blood wil do for a patient but that blister-serum wil do.

Autotherapy immunizes the patient to his own unmodified toxic substances developt in some other patient's body, or in some other medium.

Autotherapy does what Nature is attempting to do, but slowly, and thus cures the patient quickly, before he is taxt with the poisons of his disease. It puts out the match, as it wer, before the conflagration is wel started.

The culture media upon which all vaccines grow, according to "Rosenow," alter or detract from its therapeutic value. The autotherapeutic remedy is grown on no culture media. The therapeutic value of the autotherapeutic remedy is not alterd by heat or chemical preservativs, for these all tend to nullify, or alter the delicate enzymes, ferments and toxic results of chemical changes in the protoplasmic molecules, which according to Buchner and Bail, correspond to each bacterial toxin, and against which the tissues react in a curativ manner.

The autotherapeutic remedy is so far superior to Wright's autogenous vaccine that it is not open to controversy. If Wright's vaccine cures, such cure is due not to the laboratory manipulation, but in spite of it. One of the first principles of Autotherapy is that the remedy be *unmodified,* for the resistance the local tissues develop to the *unmodified* toxin-complex, from the locus of infection, is the specific resistance to the same toxins remaining in the patient's body.

The Application of Autotherapy

The Prevention of Purulent Infections.

*The dog in licking his wounds, givs himself a dose of unmodified autogenous toxins. For this reason his wounds heal quickly. He never has a bad infection except on the hed, where for anatomical reasons he cannot lick. Placing living pyogenic micro-organisms in the mouth erly, raises the power of the blood-serum and stimulates the activity of the leukocytes quickly to overcome the invaders. Too often we hear of physicians and surgeons infecting their hands during an operation or autopsy, and dying from sepsis. If the physician wil remember to *suck the wound,* then and there, and afterwards whenever there is irritation in it, there wil be no more deths from this cause, for the wound wil heal by first intention. Too great publicity among physicians cannot be given to this simple therapeutic mesure. Homely it may appear, but in therapeutic value it surpasses anything that modern medicin or surgery has given us for this condition.

In punctured and gunshot wounds, in which foren material, such as cloth, wood, etc., has been driven into the tissues, if the material is removed before antiseptics ar applied, and placed in the patient's mouth, after he has come out of anesthesia, and he be instructed to chew it swallowing the saliva and juices and spitting out the foren particles, there wil in all probability be placed in the mouth some of the micro-organisms that enterd the wound. We know when this occurs there wil be a probability, almost amounting to a certainty, that infection wil be prevented.

In view of the universal adaptability this method of treatment appeals to every lover of mankind; and in the great war that is now going on, every soldier should be instructed to lick extra-alimentary and extra-pulmonary wounds as soon as they ar receivd, and every two or three hours afterwards, for three days. By so doing, millions of lives wil be saved, and the wound wil heal in the quickest time possible. If the wounded soldier is instructed to lick his wounds there wil be but little need for other methods of treatment; and tetanus and possibly infection of the gas producing bacillus wil tend to be aborted and he wil be

*This was pointed out first by the author in 1910, and has since been referd to in many of his articles.

returnd to the firing line in the quickest time possible. If the fresh wound is so situated where, from anatomical reasons, it cannot be reacht by the mouth, a piece of steril gauze is placed over the wound, removed in six hours, the staind part is chewd and the saliva and juices swallowd and the gauze spit out. This should be done every six hours.

Never use an antiseptic on a wound that is to be treated autotherapeutically. Abundant observation clearly proves that there is no necessity of any extra-alimentary or extra-pulmonary wound becoming purulent, if this treatment is properly given.

Treatment of Infected Wounds

Time and space forbid that more than a brief allusion be made here in the treatment of many diseases that ar quickly cured by means of autotherapy. The autotherapeutic tecnic of treating purulent infections is as follow:

Mix six drops of pus from the patient's wound in an ounce of distild water—allow it to stand for 12 hours, with occasional agitation. After which time it is filterd thru a Duncan Autotherapeutic Apparatus and 20 minims of the bacteria-free filtrate is injected subcutaneously.

In the words of many physicians who employ this method, "it acts like magic." In wounds in no way connected with the alimentary tract and the respiratory system, the following tecnic may be employd with equally good results.

Mix 10 drops of pus in 4 ounces of water. Of this giv the patient a teaspoonful every hour for 10 doses. This is obviously for strong helthy individuals. Patients with low vitality, the very old, the very young, should be given proportionately less.

Furuncles, severe purulent infections, etc., wil usually heal by this method quickly; often within twenty-four hours. The pain usually leaves in from two to six hours. If in doubt, try it, giving one treatment as outlined abov, every five days. This is a safe general rule. To be more specific the patient should be individualized. After the treatment the pus becomes thin. Giv no more as long as this condition prevails. When the pus becomes thick again, repeat. Coincident with the pus becoming thin, the clinical symptoms subside.

What has been said of purulent infection is timely, and if the present war did nothing else than introduce Autotherapy into the army, much wil hav been accomplisht. The treatment of infectious diseases other than purulent infections, should also be considerd here, but time and space forbid. But from the fact that all localized infectious diseases ar usually cured quickly by means of autotherapy, mention should at least be made of the common conditions to which the physician is brot in daily contact, which ar usually cured quickly, namely: Cofs, colds, bronchitis, tonsilitis, neumonia, when treated erly; cronic cataral condition of the respiratory tract and of the nasal accessory sinuses, ozena, acute appendicitis, colecystitis, reumatism, eczema, acute gonorrea, cystitis, cerebrospinal meningitis, treated erly; asthma, anthrax, etc.

Autotherapy offers the best galatogogue known. In infections of nursing infants an entirely new line of orignal investigation has developt the fact that nursing infants ar treated successfully by immunizing the mother to the microorganisms activ in the infant. The antitoxins developt in the mother ar past to the child in the mother's milk and cure it quickly. This is applicable to infections of the umbilical stump, palatal ulcerations, cofs, colds, bronchitis, tonsilitis, neumonia, etc.

Up to the present time there has been no means whereby physicians could obtain knowledge of this new therapy, except from three hundred articles and abstracts from these, that hav appeard in the standard medical journals, since the year 1909. However, a book on the subject by the writer, is nearing completion, and in all probability will be on the market in the Spring of 1918.

2612 Broadway, New York City.

THE FOLLOWING AR A FEW OF THE TITLES OF THE 300 ARTICLES THAT HAV ALREDY APPEARD RE AUTOTHERAPY

No. 1. *Medical Record* Sept. 16, 1911
A New Method of Vaccine Treatment and Prevention of Sepsis.....Charles H. Duncan, M.D.

No. 2. *Medical Record* March 30, 1912
Gonorrea, Its Prevention and Cure by Autotherapy.....Charles H. Duncan, M.D.

No. 3. 1912
Proceedings of the 49th Annual Meeting of the American Veterinary Medical Ass'n.
Autotherapy of the Unmodified Natural Toxins in the Treatment of Disease.....
.....Charles H. Duncan, M.D.

No. 4. *New York Medical Journal* Dec. 14-21, 1912
The Unmodified Autogenous Complex in the Treatment of Disease.....
.....Charles H. Duncan, M.D.

No. 5. *American Practitioner* July, 1913
Autotherapy Versus Operation.....
.....Charles H. Duncan, M.D.

No. 6. *American Practitioner* Sept. 1913
Autotherapy in Purulent Infection and the Tecnic of its Application.....
.....Charles H. Duncan, M.D.

No. 7 *The American Journal of Surgery* Oct. 1913
Autotherapy in Surgery.....Charles H. Duncan, M.D.

No. 8. *Paris Medicale, Paris* Jan. 1914
Practical Treatment of Cronic Bronchitis and Catarral Condition of the Respiratory Tract.....Charles H. Duncan, M.D.

No. 9. *Therapeutic Record* Jan. 1914
Urin as an Autotherapeutic Remedy.....
.....Charles H. Duncan, M.D.

No. 10 *The Practitioner, London* April, 1914
Autotherapy in the Prevention and Cure of Purulent Infections.....Charles H. Duncan, M.D.

No. 11. *Medical Times* May, 1914
Autotherapy in Gynecology and Obstetrics.....
.....Charles H. Duncan, M.D.

No. 12. *Northwest Medicin* Nov. 1914
Autotherapy Indorsed .....John Besson, M.D.

No. 13. *Indian Medical Gazette* Nov. 1914
(*Calcutta, India*)
Prevention and Treatment of Septic Wounds of Warfare.....F. W. Sumner, M.D.

No. 14. *Indian Medical Gazette* Feb., 1915
Case Reports Treated by Autotherapy.....
.....M. Brooks, M.D.

No. 15. *American Medicin* Oct., 1915
A Positiv Method of Preventing and Curing Purulent Infection.....Charles H. Duncan,M.D.

No. 16 *Interstate Medical Journal* Oct., 1915
An Appeal to the Army Surgeon for the Use of Autotherapy.....Charles H. Duncan, M.D.

No. 17. *Medical Council* April, 1916
Autotherapy and the Young Mother.....
.....A. Clement Shr:e, M.D

No. 18. *International Journal of Surgery* July, 1916
Editorial on Autotherapy.....

SUGGESTION

Under this hedding can in reality be placed *all* systems of therapy. I do not mean by this that suggestion is *all* there is to therapeutics, but we must admit that suggestion is the spring that makes the human watch go. Suggestion is the fundamental principle underlying human traits and caracteristics. The very definition of the word *sub,* meaning under, and *gero,* to bring, is *to bring under.* In other words it is the idea or thot conveyd from one mind to another, be it by hint, intimation, or insinuation. It may be communicated by word, gesture, look, or association.

From a medical standpoint, however, suggestion has a specific signification. Some physicians hav gone so far as to say that suggestion is *all* there is to medicin and others hav gone to the other extreme and say there is nothing to suggestion. Recently at one of my lectures, when speaking of the importance of suggestion in treating *all* human ils, one physician during the general discussion said he did not believe there was anything to suggestion, but that the remedy *per se* was the actor. I askt him if he ever gave prescriptions. He replied that he did. I then remarkt that probably when he handed his patient the prescription he told them he knew that the prescription would *kil* them. At first he did not seem to grasp my meaning. Soon he "woke up" and said, "Why, no. I tel them that it wil *help* them because I would not giv it to them unless I thot it would." It did not take me long to convince this man that his prescription was impregnated with *suggestion,* and he admitted that he had never thot of it in that way before.

I once met a business man who said he did not believe there was anything to suggestion—that no one could suggest anything to him that he did not believe himself. To make a striking example of this man's remarks, I askt three or four persons in the same or adjoining offises to tel this man on a certain morning how bad he lookt. It was ar-

ranged that one should tel him that he lookt sick. Another was to tel him that he lookt terrible, and another that he should go home before he was laid up, and another that he should come to see me for medical advice and then go to bed. This man left his home in good spirits, but before two o'clock that day he was one of the most dejected looking objects one could find. He came to my offis complaining of "feeling so bad," but did not know where, and wanted to know what I could do for him. I told him he certainly lookt bad and should go to bed and take some medicin that I handed him and he would be alright in the morning after he had had a copious movement of the bowels, which the medicin was to produce. He did as he was instructed (believing in physicians but not in suggestion) and the next morning he had, as he afterward remarkt, "the greatest fysicing time of his life." When he was later told this whole thing had been pre-arranged and that the medicin he took was only milk sugar, he said, "Wel, I am now a believer, but I really was sick." Of course he was sick. *Anybody whose mind is sick is sick all over.* Cure a person *fysically* in any way you wish and leave his *mind* uncured, and he is stil sick.

I remember once of a hunting party going out in the woods far from any village. They knew of a hunter and trapper who, with his family, occupied a shack "far away from nowhere." As was their custom, the hunters stopt there for supper. They notist that the old trapper was very sick and the wife said that she was afraid he was going to die as his bowels had not moved in five days, and altho she had tried all their home remedies, nothing would "work." One of the hunters, a believer in suggestion, told them that he knew of a certain root that never failed to make the bowels move and he would go out and find some, powder it and make some pils for the old man to take. He went out to a worm-eaten log, got some of the worm dust, rold it up into three pils and brot them back to the shack. He told them that this was a most powerful remedy and to take one then, one at twelv o'clock and one at five in the morning, and the bowels would move by seven o'clock as they had never moved before. So thoroly did he impress this upon the sick man's mind and upon that of his wife that both wer then and there convinst that the remedy would work at seven o'clock the next morning just as truly

as the sun would rise. The next day the hunters stopt back at the shack to see how the old man was. They found him a little the worse for wear, but very happy over the fact that, as he exprest it, "that pizen of yours workt me inside and out." They lernd that the old man's bowels had moved at seven o'clock that morning and *moved* in every sense of the word.

I could cite case after case to prove that suggestion and suggestion only would do more for an individual for right or wrong than any other agency known. We, as physicians, must not conclude that everything in medicin is suggestion because it is not true, but we must realize that if we hav no faith in the remedy we apply, that remedy has lost most of its potency at our hands.

If you do not believe in the methods that you ar using, you cannot possibly imbue confidence in the minds of your patients.

I shal never forget one of my pupils telling me that he had no success with oxygen vapor. He said he thot he would discontinue its use, but he wisht that I would stop at his offis the first time I was in his vicinity and see if his apparatus wer alright. I cald there and while waiting to see him I herd him speak in the following manner to a patient: "This is a new machine that I hav gotten for making oxygen. I do not know whether it is any good or not but it certainly wil not hurt you and you might as wel try it." When I saw the doctor, I askt him if that wer the way he spoke to his patients about his treatments. He did not realize what I ment when I told him just how his "persuasion" struck me, and imprest him with the folly of his ways. He admitted that it had never occurd to him before in that light. I told him that I should like to see the next person to go on the machine. I did so and from that time on this doctor said a new light dawnd upon him and that his fysical methods of treatment wer proving to be a great success.

You skeptical ones wil say that there could not hav been anything in the *remedy* or it would work anyhow. This is not so. I wil cite one particular example. A physician of my acquaintance, who is inclined to be a little absentminded, told me that he had two boxes of pils, one containing sulfocarbolates and another containing cathartic pils. He said one box of pils he had put up for a person with diarrea and the other for a person suffering with constipation. He

said he did not know how it happend, but he gave the patients the wrong boxes. In each instance he told them what they could expect—that the one with diarrea would be cured and the one who was constipated would hav a free movement of the bowels. The next morning he discoverd his error, and to his astonishment, the pils had workt according to his *suggestion* and entirely opposit to their properties.

To condense this almost endless subject into a nutshel, let me say to you physicians that *if you do not hav faith in the modality you ar using, do not use it; and if you hav faith in it, impress your patients with it and you wil be more than pleasd with the results.*

A smile or a kind word is reflected from the recipient to the donor.

In like manner, faith exprest to another is reflected to the giver.

As I wanted to giv my readers something very much to the point on *Suggestiv Therapeutics,* I askt the wel known writer and lecturer, Dr. Charles F. Winbigler, to prepare a lecture for this book. To most of my readers, Dr. Winbigler wil not need an introduction. To those who want to know more of him, after reading this lecture, I would suggest that they read his matchless work entitled, "Suggestion: Its Law and Application, or The Principle and Practis of Psycho-Therapeutics." Other books by the same author ar "How to Help and Heal One's Self or A New Outlook in Life." "How to Heal and Help Others," "Christian Science and Kindred Subjects: Their Facts and Fallacies." All his books ar publisht by The Commercial Printing House, 218-220 Boyd St., Los Angeles, California.

SUGGESTIV THERAPEUTICS

By Dr. C. F. Winbigler, Los Angeles, Calif.

The title, Suggestiv Therapeutics, expresses more fully what is intended, as to the method used in recovering the sick from their ailments, than the terms Psyco-Therapeutics, Hypnotism, or Mental Healing.

Psyco-Therapeutics literally means soul-healing but by use it has come to mean Mental Healing. Hypnotism is one fase of Suggestiv Therapeutics. It is a hyper-suggestible condition of the mind. Sleep is an incident, not an essential part of hypnotism. In this state the conscious manifestation of mind is held in abeyance and the subconscious manifestation is cald into activity. The vital forces and functions of the body ar controld by the subconscious, or involuntary, fase of mind and the suggestible condition leads to a renewd activity of those forces thru the nervs.

It is a generally accepted law that *all diseases ar cured by the mind acting thru the vital forces of the body and thus establishing a normal condition.*

The body adapts itself in harmony with the ideas of the mind.

Suggestiv Therapeutics implies that suggestion is utilized to impress the mind in a specific manner, and causes it to manifest certain power in a definit way in the whole body or in special organs in order to correct abnormal states and establish normal conditions.

A Brief History

Healing is one of the youngest of the *sciences* but one of the oldest of the *arts.* There hav been three distinct periods.

1. The prehistoric or the uncertain which continued to the end of the second century.
2. From the second century to the end of the seventeenth century.
3. From the eighteenth century to the present time.

The last two centuries hav been the greatest of all the periods and the last seventy years the greatest of these two centuries in the advancement of healing.

The first period was individualistic and guesswork. *The second* was under the control of the church and thus

corporate as to rights, privileges and sanction. *The third* has been experimental and recently scientific.

The first was largely fysical, the second fysical with a mental element—as in the New Testament times and immediately after. The last was fysical, but gradually recognizing and using the mental or suggestiv element or method in a scientific manner.

One important thing in all the treatments of disease, in all nations, commencing with the Egyptian, was the laying on of hands, combined with certain formulas and ceremonies.

Incubation—"Temple sleep"—was commonly practist in the temples of Isis and Serapis and afterwards in the Greek temples. The Babylonians practist incantations. Magicians, astrologers and sorcerers wer the ones who did healing.

Exorcism was practist by the Jews and by other people also. The leading element in exorcism is mental but it was sometimes accompanied with fysical action and instruments. Hundreds of illustrations, some fabulous but many of them true, as to the power of definit suggestion used in exorcism could be given covering the times of the past to the present.

Different names hav been given to the practis of what we call Suggestiv Therapeutics. One of the most familiar is Mesmerism or Magnetism. It was a practis developt toward the end of the eighteenth century. F. Anton Mesmer (1733-1815), an Austrian physician, came to Paris about 1778 and practist the art of healing by using magnets. He claimd that plates, rings, collars, amulets, etc., which he used wer charged with magnetic fluid and that he had the power to direct this fluid thru the body, or to any part of it, by means of passes and manipulations. This was proved untrue by men who investigated his system of cure, but they found that by manipulation certain forms of suggestion would lead to remarkable results in healing. Those investigators found, and psycologists now believe, that Mesmer's astrological lectures, yellow robes, dimly lighted room, soft music, and waving wand wer only auxiliaries to help enforce certain suggestions upon minds which wer receptiv and thus causd a renewd activity of the vital functions of the body by which the cure was wrot.

Mesmer subsequently gave up many of the auxiliaries and said the cures wer wrot by animal magnetism. The

special commission appointed by the French Government to investigate Mesmer's cures reported that the *imagination,* not magnetism, accounted for the results.

Marquis de Puysegur, a pupil of Mesmer, in 1784, revived Mesmer's teachings, but modified them by the use of magnetic sleep. Many people came to him from great distances, and wer put into a sleep while seated round, what was cald, a magnetized tree, and many went away cured. The tree was a substitute for Mesmer's "baquet" or magnetized tub.

Deleuze subsequently contended that the healing was performd by animal magnetism.

Mesmer died in 1815 and that ended the first period of the progress of animal magnetism.

The second period is from 1815 to 1841 when Dr. James Braid, an English surgeon, discoverd and formulated the method of hypnotism.

The third period reaches from 1841 to 1887 when hypnotism was tried out and many things discoverd that wer hitherto unknown.

During this period two rival French scools of hypnotism carried on their experiments. Charcot and Richet, at the Salpetrière Hospital in Paris, hedded the one while Liebault, and later his pupil Bernheim, of Nancy, hedded the other.

Charcot and his followers claimd that the hypnotic state was a manifestation of hysteria, with the accompanying fenomena of anesthesia, catalepsy, magnified suggestibility, etc., and could only be induced in hysterical subjects. Liebault and Bernheim showd this position and view to be absolutely false and demonstrated the fact that these fenomena could be produced in perfectly normal persons of both sexes, not only in the hypnotic state, but to a certain extent in the waking state.

Liebault, the hed of the Nancy scool, was really the founder of modern Suggestiv Therapeutics, and he cleard away much useless rubbish, the outgrowth of the teachings of others, and made it clear that *suggestion* and not a magnetic fluid, nor the psyco-fysical effect of the concentration of the mind and eyes on a bright object, produce the fenomena of hypnotism and its remarkable manifestations. Braid advocated the bright object theory, and Mesmer advocated the magnetic fluid theory.

Bernheim, a pupil of Liebault, has done more than any one previously to show the power of suggestion upon the mind and he presents the scientific fases of Suggestiv Therapeutics more definitly than any one before him. Dr. Dubois of Berne, utilizes suggestion in the form of persuasion and re-education, in the waking state of the patient, and secures remarkable results. Hence Suggestiv Therapeutics as a method of treatment has many different fases. Suggestion may be used in hypnotic sleep, in a pre-hypnotic or slightly drowsy state, in the form of persuasion in a waking state, and in re-education in every state.

Many names might be given of persons who hav used these different states in which to bring help to humanity in sickness or disease. John Elliotson, a prominent physician in England, who treated many successfully, and who was editor of the Zoist, and James Esdaile, a surgeon in the servis of the East India Company, who performd thousands of painless operations, both did their work when persons wer in a hypnotic condition.

A fourth period dates from 1887 to the present time. This is the period when the psycology of the work became an important element in explaining how the cures wer wrot.

A number of lecturers and investigators like Prof. J. Stanley Grimes, John Bovee Dobs, and J. R. Buchanan also developt in this period certain theories which ar forms of Suggestiv Therapeutics.

The Psychical Reserch Society of London publisht two large volumes entitled, "Phantasms of the Living," and other reports which hav become the basis for the formulation of a working hypothesis which fits into the filosofy of Suggestiv Therapeutics. Mr. F. W. H. Myer's hypothesis of a subliminal self or mind, which has been modified, and is now accepted as the theory of the subconscious mind, has afforded the basis for a reasonable explanation as to how suggestion becomes operativ thru the mind in the body of the person afflicted, or in one who desires to produce a great effect in the personality or in one who desires to realize the best in his life.

Animal magnetism as a theory and practis was introduced into America by one named Poyan, a Frenchman, in 1813. Many persons took up the study of the subject and the practis of the art. Among them was P. P. Quimby of Maine who began experimenting with mesmerism and did

the work very effectivly. The attention of the people was cald to his work and theories by the Maine papers. He subsequently developt a theory and practis of his own. In 1858 he settled in Portland and had a large practis. He remaind there until his deth. He claimd that "Disease is a wrong belief, change that and we cure the disease." He says: "I tel the patient his troubles, and what he thinks is his disease; and my explanation is the cure.—*The truth is the cure.* Man is made up of truth and belief; and if he is deceivd into a belief that he has, or is liable to hav a disease, the belief is catching, and the effect follows it. Disease is made by our belief, or by our parents' belief, or by public opinion. *Disease is error.*"

He cured disease by denial and by affirming perfection of the real self. He gave present, silent and absent treatment. He was the one to whom Mrs. Eddy went when sick and she was heald and she took with her his teachings and principles and taut them and incorporated them into her book, "*Science and Health.*"

Fases of suggestion hav been used by so-cald *Christian Science* and many other cults in this and other centuries. This givs in outline a brief history of Suggestiv Therapeutics.

Classes Practising Suggestiv Therapeutics

1. Those using only psychical or mental methods.
2. Those using auxiliaries with mental methods.

The first class embraces:

(a) Those using persuasion, explanation and efforts to remove misconceptions.

(b) Those using hypnotism, the drowsy or hypnoidal condition in order to induce a magnified suggestible mental state.

(c) Those who re-educate the patient in mental control, in emotional inhibition and volitional activity.

(d) Those who find by psyco-analysis a represt mental condition—erly or late—which can be relievd by a method of "throwing this out," resulting in a normal mental reaction and helth.

(e) Those who use silent and telepathic suggestion with the subject and hold a mental picture of his perfection, etc.

The second class includes:

(a) Those who employ mecanical or fysiological treatment with mental or psychical principles.

(b) Those who use religious ceremonies, ordinances or symbolism with psychical suggestions.

There ar modifications of these classes, but in the main this classification is quite comprehensiv and includes those who practis the principles of Suggestiv Therapeutics.

Theory Briefly Stated

The theory, stated briefly, upon which this practis rests is that the human mind has, at least, a two-fold manifestation—conscious and subconscious. The former receivs its information thru the five senses, and is controld largely by reason and environment. It is the adapting manifestation of mind for the daily, waking life. The subconscious manifestation is amenable to suggestion, and continues its work without cessation, and controls all the vital functions of the body. When good, helthful suggestions ar made to the mind, if the mind receives them fully, excellent effects wil be produced.

Wide Application

Suggestiv Therapeutics, as a science and art, has a wide application to the psychical, mental and fysical life of man. It helps him to understand and use his powers more efficiently; it emfasizes the power that resides in man's personality; it shows the body to be secondary and not primary in man's constitution; it assists in keeping the body in a normal condition and helps restore it to helth, if it is diseasd or in an abnormal condition.

Many Names for the Practis

Magnetism, Mesmerism, Electro-biology, Hypnotism, Braidism, Suggestiv Therapeutics, Psyco-therapeutics, Mental Healing, Faith Healing, Divine Healing, Eddyism or Christian Science, Dowieism, The Emanuel Movement, Metafysical Healing, Divine Science, etc., ar some of the names given. *The one supreme and effectiv principle used by all these classes and by many others is SUGGESTION.* They may deny this, but their denials amount to nothing in the face of their known practis and methods.

The Law of Suggestion, or some fase of it, is used in every system of healing that ever has been promulgated or that ever wil be. Suggestiv Therapeutics is the Science, Suggestiv Therapy is the Art, and Suggestion in its many forms is the Method.

Diseases Cured

Functional diseases ar amenable to and curable by suggestiv treatment. Organic diseases may be modified and some of them in the erly stages may be cured. It is unwise to promise a cure in decided organic diseases.

The relm is extensiv in which the principles of Suggestiv Therapeutics may be used. Modifications of bodily conditions and insensibility to pain can be produced; sensibility can be increast; the senses can be made more acute; the puls can be increast or diminisht; the peristaltic action of the bowels can be increast; child-delivery can be made painless; mental disorders, stammering, muscular and nervous tics can be relievd; alcoholism, the drug-habit, moral perversions, obsessions, and fobias can be cured.

Nervous disorders—where degeneration has not largely taken place—and all functional disturbances can be relievd; insomnia can be cured; and most of the ailments, to which "the flesh is heir," may be permanently benefited and frequently cured by the utilization of the principles of Suggestiv Therapeutics.

The list of diseases could be very much extended, but these ar typical conditions that can be cured.

It would be interesting to discuss and anser many questions concerning the hypnotic fase of Suggestiv Therapeutics, but it would demand too much space.

There ar several questions that I ought to anser briefly.

1. *Whhat ar the stages of hypnosis?* a. Sleepiness. b. Light sleep, without the loss of memory. c. Deep sleep or somnambulism with loss of memory. In this stage splendid post-hypnotic effects wil occur.

2. *Is it a sign of a weak wil if one can be hypnotized?* No. The best subjects ar those who hav strong wils and can concentrate the mind and who ar intelligent about what is being done. Insane people and idiots cannot be hypnotized.

3. *Can a person be hypnotized against his wil?* No.

4. *What is hypnotism?* That is anserd in the first part of this lecture.

5. *Can a person who is hypnotized be made to do an immoral act contrary to his education and moral training?* No. This has been proved many times. To suggest an immoral act to one in that condition would immediately awaken him or produce a hysterical condition.

6. *Does the hypnotsit hav complete control over the subject and can he destroy his wil power and reduce him to a mere automaton?* No. The purpose of hypnotism is to develop and strengthen the wil-power and the moral fiber, so that the subject shal be able to giv up slavish habits which hav been mastering him. This has been done unnumberd times. Drunkards hav been reformd, dope fiends hav been deliverd, and wrong sexual habits hav been given up under the power of suggestion used in a hypnotic condition. If hypnotism is used at all, let it be for benevolent and helpful purposes and not for entertainment and stage performances.

There is really no need of using the hypnotic form of suggestion as the same results can be obtaind when the subject is relaxt, so that he does not care to move, and when he wil quietly and unprotestingly receive the suggestions given.

Forms of Suggestion

1. Ordinary, as in the home, society, business, scool, church, etc.

2. Hypnotic, given in the hypnotic state.

3. Direct, as in telepathy.

4. Indirect, when the conscious mind givs suggestion thru the senses to the subconscious mind of another.

5. Ante-hypnotic suggestion prepares the way for hypnosis.

6. Post-hypnotic is suggestion given in the state of hypnosis and carried out after the subject is awakend.

7. Larvated suggestion is that which is conceald or markt as in the use of objects or substances which ar claimd to hav or produce special effects. (Placebos, church relics, shrines, etc.)

8. Auto-suggestion is talking to one's self. The conscious mind makes suggestions to the subconscious mind when one is in a quiescent state. It can prevent one being hypnotized or influenst by another.

9. Hetero-Suggestion is that which is given by one person to another. It may be mental or verbal.

10. Sensory Suggestion is that which is given or receivd thru the senses.

11. Ideational or psychical suggestion is largely auto-suggestion and finds its manifestation in extraordinary fenomena, *e.g.,* in spiritism, hysteria, devotion, reveries, mysticism, etc.

12. Imaginary Suggestion deals largely with mental and memory pictures. Blake, Swedenborg, Poe and many others illustrate this form.

13. Narcotic suggestion is really sensory and utilizes certain drugs to aid in producing a condition where certain dreaming manifestations occur. Alcohol, opium, Indian hemp and other drugs can produce this condition. De Quincey, Coleridge and Poe illustrate the effects of this form of Suggestion.

14. Mental Suggestion is that which is given without speaking. A number of cults use this form in treating the sick.

15. Verbal Suggestion is given by means of spoken words and is the most common.

These forms of suggestion ar the ones that ar generally used.

Theory of Suggestiv Treatment

The one great purpose in giving Suggestiv Treatment is to lodge in the mind certain suggestions which wil work effectivly in exciting the mind to definit action, thru the nervous system and vital forces of the body, in order to recover the afflicted from an abnormal condition and produce a normal condition. Many theories hav been announst in order to explain the effect of suggestion and to show how it works. There is an element of weakness in every one of them.

Mesmer's theory that a disturbd flow of magnetic fluid in the body produced sickness and an application of magnetic plates and other appliances would correct this, and produce a normal condition, has been abandond. There is an *element* of truth in it.

Elliotson and Esdaile claimd that the fenomena of Mesmerism was due to a peculiar fluid or force which they termd "Odylic."

Braid at first lookt upon the Suggestible State as due to an artificially produced sleep—this was the origin of the hypnotism—but later he came to the conclusion from his experiments and thinking on the subject that the fenomena and the cure of disease wer entirely due to *suggestion* and that this also explaind the effects of magnets used.

Liebault claimd that *suggestion* and suggestion alone explaind all the fenomena of hypnotism and the wonderful psychical effects of healing. He never used anything else but suggestion in bringing about the normal condition in the afflicted. He suggested sleep and in the sleeping or sleepy condition he made the suggestions which he desird to hav realized in the lives of those who came for help.

Bernheim, a pupil of Liebault, took an advanst position and claimd that the fenomena of hypnotism could be produced without inducing hypnosis. He said, "Hypnotic trance is ordinary sleep; hypnotic suggestion is ordinary command. You tel the patient to go to sleep and he goes to sleep; you tel him to get wel and ge gets wel immediately."

The principle advocated is correct but the effects or results do not occur so speedily as he states. Sometimes explanation, re-education and breaking up of old habits must be enforst before the complete recovery occurs.

Charcot's theory that all the fenomena of hypnotism wer due to hysterical manifestations and hence could only be demonstrated upon hysterical people has been discarded by psycologists, psychiatrists and by people who know anything about or practis Suggestiv Therapeutics.

Heidenhain, advocated the theory that by a monotonous stimulation of certain nervs by fixt gazing at an object (crystal gazing), the higher brain cels wer arrested in their activity. The result of such a process is that actions under control of the higher cels, under a hypnotic state, ar controld only by the lower centers, and the subject, when in this condition is an automaton. This view has not been accepted.

The theory of Myers, alredy referd to, that there is a subliminal or double consciousness in every sane person and that the two streams of consciousness, the one abov the threshold cald the supraliminal and the other below the threshold cald the subliminal, ar related and each produces corresponding manifestations which affect the body and the life of man.

Other terms, more generally accepted today, which ar applied to these streams, ar conscious and subconscious. There may be a co-operation of consciousness or these may be an independent action of the subconsciousness. The extraordinary fenomena such as dreams of value; telepathy; clairvoyance; marvelous cures; genius; inspiration; remarkable religious movements; spiritistic fenomena, that ar real; psychical and superior wisdom in intellectual or mental power; and other things of an exceptional nature; depend upon the manifestation of the subconscious mind. The conscious manifestation of mind is held in abeyance and the subconscious manifestation produces marvelous results and exercizes wonderful therapeutic effects on the body.

Treatment by Suggestiv Therapeutics

The barest outline of the treatment by Suggestiv Therapeutics only can be given here. One important and essential condition is that the patient shal be in a receptiv state of mind. A *desire* for help is a great aid in awakening in the patient a mental state of expectancy in which suggestion becomes very potent for good. The relaxt condition of body, as the patient lies in an easy chair or is resting on a bed, is a good position in which to receive the suggestions given. The physician ought to hav a clear understanging as to what he wants to accomplish. If he desires to inhibit for the time being the action and antagonism of the conscious manifestation of mind, he can suggest sleep. If there is no need of that he can relax, by suggestion, every part of the body and the mind, until there is no desire on the part of the patient to move or think. After this he can suggest complete rest and state that the patient wil accept the suggestions which he wil make. He ought to make the suggestions definit, short, simple and emfatic. A low but forceful tone of voice is best, with repetition of the suggestions in different and in the same form. *Repetition is a great power in suggestion.* Suggesting the normal, not the abnormal condition, and holding a picture of the same in his mind and determining that the picture shal be formd in the patient's mind wil be helpful. He wil be surprized at the result.

The time for treatment ought not to continue more than thirty minutes—less if possible. The number of treatments depends upon the case. Daily in some cases for one

or two weeks, then on alternating days, then twice a week, then once a week until the person is normal.

The ordinary cases ought not to be treated more than two or three times a week.

If a physician uses the hypnotic method he ought to always hav an assistant or some one in the room, or in an adjoining room, for self-protection. Not many persons would take advantage of a sincere and honest physician who desires to do all he can to help the needy, but some patients from sinister or from other motivs, and possibly from the mental fear or misapprehension may develop hallucinations, which may lead them to make charges against the physician. *A little self-protection is worth a ton of lawyers' advice and court procedings.*

The physician ought to be sincere and genuine in his life as these conditions impress the mind of patients favorably and helpfully. Large sympathy, much tact and great patience ar necessary in doing this work.

One must not overlook the mind in treating the body, nor overlook the body in treating the mind, as both ar intimately related.

It may be wel in some cases to take up one serious condition and mentally conquer that and then attack another. Holding a picture of the complete, perfect, normal man in mind when treating is a great aid.

CARACTER READING

In some of our large cities can be found specialists who teach business men, credit men, and others the art of caracter reading. No one needs to be posted on caracter reading more than a physician. By lerning to observ a person's countenance and their general make-up, a physician is aided greatly in arriving at a diagnosis, as wel as judging as to what advice is best to giv the patient. We all know that we cannot giv the same advice to every one, but hav to govern ourselvs according to the *type* of individual with whom we ar dealing.

It has been wel said that we *see* many things but *observ* very few. My first training in the line of observation was in studying sketch drawing. My instructor would hav me walk thru a room and then go into another room and draw what I saw. At first I notist only a chair or a table, but by practis I was able to draw everything that was on the table, and little by little I found that the art of observation was easily lernd if one would apply himself.

I hav often askt physicians in class rooms to tel me how a patient who had just been examind was drest, if they walkt upright or stoopt, and many other things. It has always been surprizing to lern how few physicians hav lernd the art of observation. In one large class a man came in to be examind who had a mustach and a bald hed. After he left the room, I askt if someone would giv me a general description of this man's hed. Not one had observd that he had a mustache altho it was of "respectable size." At another time a lady came in for examination and after she left I askt who could tel me what kind of dress she had on, what color it was, and how her hair was drest. Not one could tel.

If we do not observ how a person is drest or how he carries himself, we certainly cannot observ the *types* of caracter. A good diagnostician must be a good observer.

Lern to observ the shape of the patient's hed and every part of the body.

In studying children it is of the greatest importanct that we study the *type* because by knowing the *type*, we can giv intelligent instruction to the parents as to what course to pursue either in treatment or in training.

As I wanted to giv my readers the very best possible information regarding caracter reading, I requested the best expert that I know of in psyco-analysis to write a lecture on this most important subject.

In introducing Dr. John T. Miller to my readers who hav not been fortunate enuf to hear him lecture, I might ad that he has given more than a quarter of a century to the study, application and dissemination of the basic principles of practical psycology in education and vocational guidance as wel as in the fysical betterment of humanity. As evidence of the recognized value of his work he has been solicited by one of the leading medical publishers of America to write an extended treatis which can be used as a text book, and he expects to place this before the public in due time.

The principles taut by him hav been tested in hundreds of colleges, high scools and grade scools, and medical students hav testified to their value as an aid in gaining a better understanding of the cause, prevention and cure of disease. When one has devoted his life to perfecting a system of psycological training that can be used in education and mental medicin, he naturally desires to share his knowledge with others who ar also seeking to spred a gospel of helth and true happiness. I bespeak an impartial hearing for Dr. Miller.

PSYCO-ANALYSIS AND PSYCO-DIAGNOSIS

By

DR. JOHN T. MILLER, Los Angeles, California

We shal touch upon some of the most important points of the abov subject in this necessarily brief review, but the time is near when this study wil be considerd basic in all medical education. Physicians who ar now in practis should equip themselvs with a knowledge of the Gallian principles of psyco-analysis and psyco-diagnosis thru home study. Psyco-analysis supplies one with a knowledge of individual adaptation in education and in all relations with our fellow beings. When inharmony of mind and body is manifest, psyco-diagnosis wil indicate where mental adjustments should be made, enabling the intelligent physician to use the treatment best suited to restore helth and harmony.

Psyco-diagnosis consists of analyzing the conscious fase of mind into its elements and determining how far they ar from normal in their expression. From the time of Hippocrates, and even before, it has been recognized that mind is a great factor in the cause and cure of disease,-but before the discoveries of the eminent Dr. Franz Joseph Gall the elements of mind wer unknown and there was no system of psyco-analysis.

In recent years the psyco-analysis of Freud and his students has receivd much attention from the medical profession, but the system of Dr. Gall is of more servis in psyco-diagnosis than all others combind. It is as essential to the physician as child-study is to the teacher.

During the past century no other fase of medicin has grown so rapidly as that of mental medicin in its various forms. In the minds of many there is a strong prejudice against methods of "mental treatment" that require the conscious fase of mind to be put asleep in order to adjust the organism thru the unconscious fase of mind. There can be no such objection to psyco-diagnosis and mental adjustment thru the conscious mind.

The body may be likend to a musical instrument from which the player, the spirit, may draw either harmony or discord. The performer upon the piano may be a skild musician, understanding the tecnic of musical composition perfectly and yet be unable to get the expression he desires, because the instrument is not perfect in material or construction; or again, the instrument may be perfect in every part

but the unskild player gets only discord from his efforts to produce melody. There must be harmony between the player and the instrument as wel as harmony in all parts of the mecanism.

It is the offis of the true psyco-diagnostician to detect the inharmonies existing between the mind and body or in the different powers of the mind manifested in the body of the patient. The physician who is able to take in at a glance the proportionate development of the body, face and brain with the combinations of the mental powers indicated by these outward signs, can tel at once to what form of disease his patient is most susceptible. He wil then use the means that ar rational and best suited to the individual case to establish *harmony* which is *helth.*

Every intelligent person now believes that it is natural to be wel and unnatural to be il. We suffer from sickness because our ancestors for generations hav been careless in their habits of living and thinking, and humanity has not yet lernd to conserv life.

Dr. Oliver Wendell Holmes, who for forty years taut anatomy in Harvard medical college, saw the real conditions when he said: "There ar some people who think everything can be done if the doctor, whether educator or physician be only cald in season! No doubt, but 'in season' would often be a hundred or two hundred years before the child is born and people do not send as erly as that." The physician cannot apply the preventiv mesures as erly as Dr. Holmes suggests without going into the relm of eugenics and giving young people the information that all ar entitled to receive from their parents.

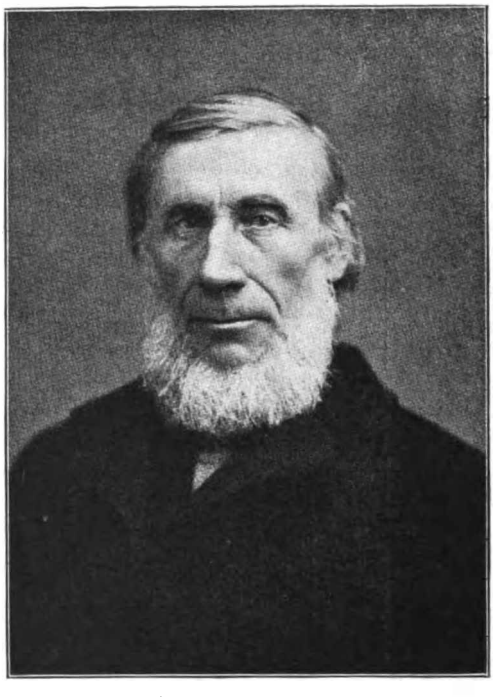
Preventiv medicin is growing in popularity and when physicians ar paid for removing the *causes* of disease rather than for repairing the organism after the damage has been done, the principles of psyco-diagnosis and mental adjusting wil come into their own, and wil be applied intelligently in harmonizing the powers of mind from the erliest period of the child's life.

To hav a working basis upon which to study a person from the medical point of view, it is necessary to understand the classification of the temperaments. The Greeks wer the first to giv a classification of human temperament based upon pathological conditions. This was used in a slightly modified form until within a century, since when more modern writers hav given to the world a system based upon the struc-

ture and functions of the body; the mental powers ar also mesured by this system, giving a complete analysis of mind and body.

The organs of the body ar divided into three systems according to their work: The motor organs consist of the bones, muscles and ligaments; these ar used in moving the body about.

The brain and nervs constitute the sensory organs; thru these the mind operates and directs the action of all the other organs of the body.



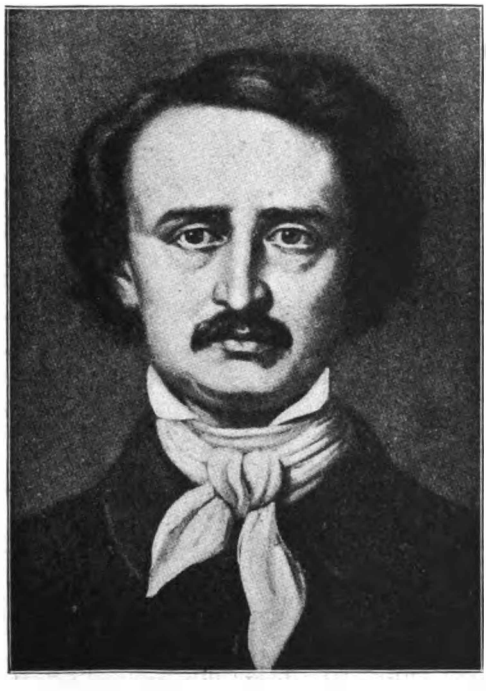
JOHN TYNDALL
Fig. 307. Motor Type.

The nutritiv organs include all that ar located in the thorax and abdomen; they prepare nourishment for the motor and sensory organs as wel as for themselvs.

The Motor Type

In persons of the *motor type* (Fig. 307) the motor organs predominate. They ar tall and angular in bild. They

hav a high crown, prominent brow and receding forehed. The cheek bones ar high and the face angular. The lims ar long and do not taper much. The hands and feet ar large. They ar awkward during youth and ar rather slow mentally and fysically. Like the winter fruit they mature late. In scool they like arithmetic and nature studies better than language and the fine arts. They should become interested in the studies that ar most intimately related to life and social progress as they ar generally very practical in

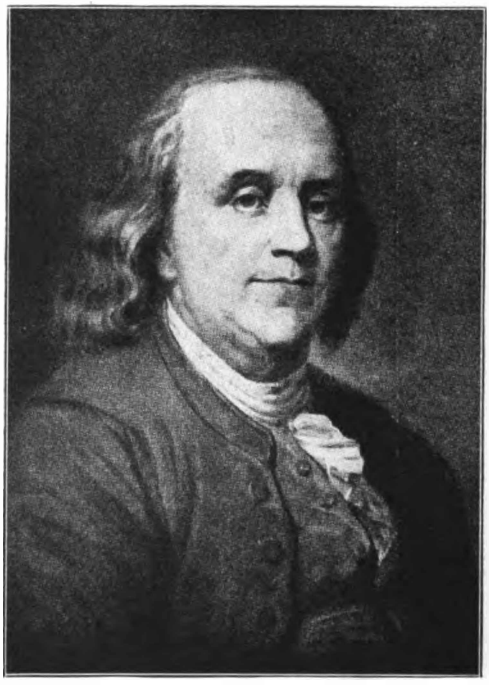


EDGAR ALLAN POE
Fig. 308. Sensory Type.

thot and action. They ar fond of outdoor occupations and of athletic sports. Men of this type succede as mecanics, carpenters and farmers or in scientific reserch. Outdoor exercize is absolutely essential to their helth. When disease attacks them they rally less quickly than those of the nutritiv temperament, but the powers of determination and love of life ar usually wel developt and they cling to life with considerable tenacity.

SENSORY TYPE

When the brain is large, the upper centers ful and the body small and slender, a person is of the *mental or sensory temperament* (Fig. 308). Children of this type ar usually precocious and often speak and act in a manner that would be creditable to persons much older than they ar. This is also the type of refinement and culture. Children of this bild ar usually easily controld at home and in scool; they

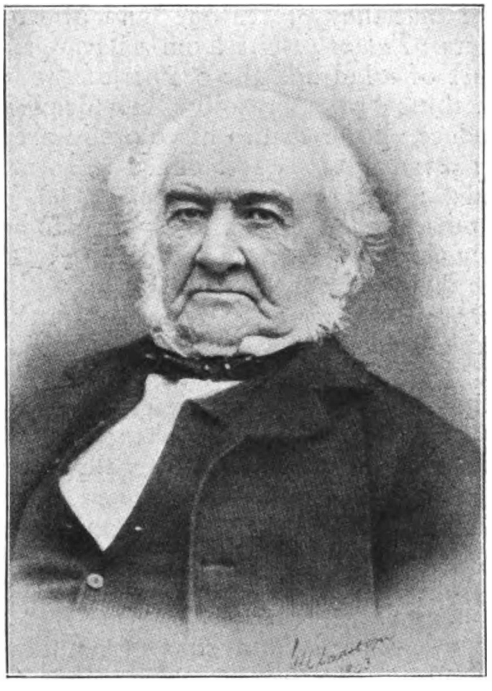


BENJAMIN FRANKLIN
Fig. 309. Nutritiv Type.

ar studious and ar adapted for work requiring speed and fine adjustment rather than strength and endurance. The nutritiv organs ar often defectiv and care must be exercized to keep the body in helth. They often need restraining in their studies and encouraging to take needed fysical culture. Sudden shock or fright may result in acute forms of disease.

The Nutritiv Type

The nutritiv organs ar the hart, lungs and digestiv organs that aid in preparing and circulating food materials for bilding and renewing all the organs of the body. When the nutritiv organs ar especially activ there is roundness and plumpness of all the features; the arms ar large at the shoulder and taper rapidly to the finger tips. This is the *nutritiv type* (Fig. 309). Children of this temperament need



WILLIAM EVART GLADSTONE
Fig. 310. Balanst Type.

much freedom to wear off the surplus energy by fysical activity. Sometimes those of this type ar too impulsiv and hav difficulty in controlling their feelings. They ar fond of social life and ar good entertainers, but they sometimes hav more ability than stability. They ar impatient and restless in sickness and hav less resistant power than those of the motor type and ar often subject to sudden and acute

ilness. They should be treated quite differently from the mental or motor types. All of the three temperaments may be modified by environment and mental activities.

The Balanst Type

When all the organs of the body ar normally developt there is an all round fysical balance and mental adaptability which giv helth and a many-sided interest rather than a tendency to narrow oneself to the same kind of study or work. This is the Balanst Type (Fig. 310). *Geniuses* ar so organized that they prefer one kind of work or study over all others. *Talent* results from a harmonious blending of the powers of mind and the organs of the body.

As the three "primary colors" ar blended in various ways to produce all the shades of colors in art and nature, so the three primary types ar blended to form all the different organizations in human nature.

Every power in the mind of every human being is good if it is rightly used. Vice, crime and disease ar the result of misusing the divine powers of mind.

Appetite is the first power to awaken in the infant. If it is gratified in a normal way the result is helth, vim, vigor, vitality and energy. If appetite is abused it may lead in after life to gluttony and drunkenness.

The *acquiring instinct* is awakend early in life; its normal expression is thrift, but abnormally developt it may lead to theft or miserliness. Many times parents unknowingly stimulate both of these powers to an abnormal degree by bribing children with delicacies and gifts, indirectly producing wrong habits of life which may be manifested later in disease, unhappiness or crime.

On the other hand many suffer from lowerd vitality because they do not giv enuf attention to appetite. One of the mental or sensory temperament, in which brain and nervs predominate and the power of appetite is below normal, wil giv little heed to food values, not knowing that the activ brain must hav food of good quality and sufficient in quantity to nourish it and maintain bodily vigor. Such should be taut to cultivate the appetite for substantial foods.

Energy, the normal expression of the power, givs force to the caracter, but a violent temper is the aubse of this divine power. This abuse opens the way for innumerable ils. The experiments of Professor Elmer Gates to deter-

min the effect of anger upon the secretions of the body proved that enuf poison may be generated in the body during a fit of anger to kil the person, if it wer not thrown out of the system immediately by the increast hart and lung action which always accompany such outbursts. Even then enuf remains to impoverish the blood and make conditions for fevers and kindred diseases. Children who exhibit an excess of this power should never be teazd nor allowd to engage in quarrels with their mates. If taut self-control in childhood, they wil be saved both fysical and mental suffering in mature life.

The physician who undertsands this fase of psycodiagnosis would detect the cause of many cases of fever and inflammation and giv directions for the correct treatment which would include quiet surroundings, non-stimulating diet and such mental suggestions as would lower the bodily temperature and giv poise and harmony.

A child who lacks aggressiv energy, and who is naturally of an affectionate but super-sensitiv nature, if misunderstood or denied the love and sympathy he craves, is thrown back upon himself, his emotions supprest and his vitality lowerd because of the contracted nervs and muscles. He is more apt to become the prey of wasting diseases. Such an one must hav quite the opposit treatment from the excitable child. Insted of quiet he should hav company, be encouraged to move about to stimulate the sluggish circulation, to eat as much as his nutritiv powers can assimilate, and abov all, his environment should be such as wil giv him more life, love and hope. Many cases of suicide might be traced back to a loveless childhood.

The wasteful expression or the extreme suppression of any power of the mind wil, thru the various emotions, affect unfavorably the organs and secretions of the body. In this connection let us note the use and abuse of the power of reproduction and the social and domestic powers. The power to reproduce life is the greatest gift bestowd by the Creator. The abuse of this power causes more disease, discord and misery than the abuse of any other power, and the effects ar seen in hundreds of wreckt lives and homes, the influence of which wil be extended from one generation to another until the knowledge and right observance of Divine law shal hav become universal.

To balance the lives of posterity and to increase domestic harmony there should be a proper blending of ten-

dencies between husband and wife. The first essential in wedlock is that there be harmony of ideals, ambitions and aspirations. Some liv together in wedlock for fifty years and rear no children. If there is not intellectual companionship in such homes it is a misfortune. There may be a proper adaptation for companionship when there is not for the right inheritance of offspring. Two consumptivs might thoroly enjoy each others society, but it is not likely that they would giv strong, helthy lungs to their posterity.

If there is a medium development of both there is a proper adaptation, providing they ar congenial to each other; but if they ar not medium they should select their opposits. The tall select the short; the stout the slender; the dark the light; the stubborn those who ar not so obstinate; the quick temperd, the mild temperd; the self-reliant those who hav not so much self-confidence. In all cases there must be intellectual harmony.

A few generations of proper selection of life mates wil do more to balance the human family and overcome domestic discord than any other mesure instituted by society. As it now is more than one-tenth of those who marry ar divorst, and many who do not divorce liv together in perpetual discord.

Fear of or hatred for the husband wil generate a poison that makes the intimate relation of husband and wife a menace to the helth of the latter and to the lives of the children for which they ar both responsible.

Indifference or lack of appreciation has a most devitalizing effect upon sensitiv natures, contracting the vital organs, impeding the flow of the life forces and bringing on melancolia to be followd perhaps by other degrees of insanity.

In no other form of disease is psyco-diagnosis of more importance than in *brain disorders*. Hundreds of cases of insanity, especially among women of the sensitiv type, result from causes patent to the keen eye of the family physician who understands the law of mental and temperamental adaptation. Every practitioner can recall case after case where the monotony of daily routine life, with no diversions outside the home and no appreciation shown within the home circle, has gone on for years until the "hope deferd which maketh the hart sick" has lowerd the vitality and dried up the fountains of life. A change in mental and fysi-

cal activities is often all that is needed to restore normal conditions.

Wil the time ever come when the physician wil be cald in season to advize the change in thot and surroundings before it is too late? How many lives and homes could be saved if the doctor wer employd to teach helth principles insted of trying to patch up the fragments.

Bernard Hollander, M.D., a noted psycological and fysiological investigator of London, in his book "The Mental Functions of the Brain," givs hundreds of cases which hav been successfully diagnosed by the Gallian system. These include every form of dementia which has come to the attention of brain specialists in hospital and laboratory work. In each case cited, the localizations discoverd by Dr. Gall wer confirmd—the lesion or defection shown in the brain substance of the subject corresponding exactly with the symptoms manifested in life.

Insanity may result from over-stimulation of any power alredy too strong or the under-development of the vital and hope centers. The dementia may take many different forms. For instance, one who has the power of reverence very strong and who allows his whole mind to dwel upon the subject of religion to the exclusion of other things is apt to manifest religious mania.

Another, having the power of self-esteem abov the normal without reasoning powers to modify it, may imagin himself to be a person of great renown (paranoia); and so of all the other powers. The perfectly balanst mind is rare indeed and the distinction between sane and insane is simply a matter of the more or less normal development of all the powers of the mind. The quaint soul who said: "Everybody is insane but thee and me, and sometimes I think thee is a little queer" was not far wrong.

Fear or caution in its normal expression givs forethot and keeps one from taking unwise risks; but its excessiv development is the cause of many mental and fysical derangements. Many instances might be cited of those who hav past thru contagion untoucht because they did not fear it or wer unaware of its presence.

Fear wil produce symptoms of acute disease, especially in children of sensitiv nature. A case came to our attention some time ago when a small boy was frightend by a savage dog. He became delirious during the night, manifesting all

the symptoms of tyfoid fever, for which the attending physician prescribed. The physician was much surprised when the fever abated in three or four days.

Another case was that of a young man, who, having the fear centers abnormally developt, was badly frightend and raved like a maniac; it required the strength of four men to hold him. Some of the best physicians in a large city wer cald to treat him, but after they had used all remedies known to them, they said that he must be sent to an institution for the insane. A caller, who was familiar with the Gallian system of brain localization, notist that the excessivly developt fear centers wer congested. He advized a hot footbath to draw the blood from the brain and put ice over the congested centers to drive the surplus blood away. In a short time the patient became quiet so that it was unnecessary for anyone to hold him. As soon as he regaind the strength that was lost thru the shock and strain, he went to work and had no further trouble.

Many, who would otherwise hav ended their days in mental hospitals, hav been restord as useful members of society and the home thru mental readjustments made by those who understand the different forms of psyco-diagnosis and the rational treatment to be applied.

Centuries ago Solomon said: "A merry hart doeth good like a medicin but a broken spirit drieth up the bones." This is as true today as it was then. Modern experimentation has fully demonstrated that all plesant mental states accelerate the action of the bodily organs while depressing ones interefre with their normal action. To dwel upon the the discords of life is to lower the vitality; to giv ful sway to any emotion is to deplete the life forces. Bernard Hollander has wel said: "Happiness signifies a gratified state of all of man's mental powers. As long as a particular brain center contains an abundance of stored-up nerv force, it responds plesurably to a stimulus. If the natural appetite is too freely exercized the nerv energy that keeps it activ is used up and it ceases to respond."

The powers which function thru the upper regions of the brain serv to connect the finite man with the Infinit; those which manifest thru the lower portions keep him in touch with Mother Erth. One sage has said: "The proper study of mankind is man." Another, "Man, know thyself!" and knowing self he shal liv free from sin, sickness and unhappiness.

INFLAMMATION

Inflammation, the lexicons tel us, is the condition into which tissues enter as a *reaction* to irritation. They also say that inflammation is caracterized by pain, heat, redness, and swelling, and histologically by hyperemia, stasis, changes in the blood, and in the walls of the small vessels, and by various exudations.

No less than forty (40) varieties ar named and classified by some pathologists.

Whole volumes hav been written on Inflammation—so important is the subject.

I am often askt just why I use powerful, radiant energy for treating nearly all conditions. My reply is, "Because powerful light and heat reduces inflammation and thus removes stasis."

We also must bring the blood to a normal (helthy) condition. It is for that reason that I employ Oxygen Vapor in nearly all unhelthy conditions.

As disease means "*unhelth*" or a state of *fysical unrest* of tissues, I employ the Magnetic-Wave Current in very many conditions of "unhelth," because it aids in bringing about a state of *fysical rest.*

As Dr. Harlan P. Cole is a wel known specialist in relieving inflammations, especially of the joints, I requested him to giv me an article on this subject. The following is his contribution:

HYPO- AND HYPER-STATIC INFLAMMATION

By HARLAN P. COLE, M.D., New York City

From whatever cause disease may arise, it must be taken for granted that the *cause* of disease is *not* the *disease*, for any disease may arise from many causes; therefore the treatment of the *cause*, however important, is *not* treatment of the *disease*.

However accurately or scientifically we may be able to trace the action of the disease-producing element, or the efforts of the body to neutralize the venom, and resist its action, we hav not yet done our ful duty. The business of the physician is the CURE of DISEASE, and it does not end when the cause may hav been located and the pathological changes studied.

It may be true that "a case wel diagnosed is half cured," but that stil leaves the other half to be done—that portion which intervenes between the condition in which we find the patient, and that normal helthful condition which we ar expected to restore.

Deth may be scientifically explaind, or may be prevented by the arrest of disease, either by limitation, the intervention of a physician or surgeon, or some other cause, but the number of people who ar going about with some remains of an ilness, or a condition which developt out of that ilness, or who hav been relievd of some important organ which was not restored to normal, should stimulate us to a more careful study of the *reason* for it.

The hospitals for the insane and the sanitoria for the housing, not cure, of the many afflicted with mild mental and nervous diseases, many of them developing out of uncured local diseases, and the great army of "reumatics," ar all a sad comment on our therapeutics, if not on our wrong diagnoses.

Disease is defined as: "Any departure from a state of helth." This seems to me more an effort to *avoid* a definition, than the ability to giv one.

Helth is defined as: "A normal condition of body and mind." It might also be defined as a condition resulting from the normal fysiological action of all the organs that ar, or should be, containd in the body.

The definition of disease does not refer to the *reason* for the departure, therefore, altho the reason must be first delt with, it is the *departure* that must be handled.

As the only instrument in the body capable of converting helth into disease, or disease into helth, is the *blood current,* we must look to this fysiological proceding, the *circulation of the blood,* (and more particularly the *speed* of the circulation), as the activ agent in producing those conversions.

As the names of all diseases begin with the name of the organ involvd, and end in I-T-I-S, and as i-t-i-s means inflammation, *all disease must be inflammation,* whatever the provoking cause.

It may wel be said that the *chemical* condition of the blood would hav much to do with the case, but as we find inflammation in *all* kinds of people, *all* kinds of blood produce it, and *all* the pathological conditions developt out of *all* kinds of blood. We wil therefore consider *all* as practically alike for the purpose.

Both *macroscopical* and *microscopical* examination of inflamed tissue reveals an *excessiv amount of blood* in the vessels normally supplying the area, an increase in the number of capillaries supplying it, beyond the normal, an infusion into the stroma or parenchyma of the tissue involvd, and of serum which has been crowded out of the blood vessels thru their distended walls. This accounts for three of the caracteristic signs of inflammation, *Swelling, Redness,* and *Pain,* for the presence of an increast amount of blood in an area causes swelling and redness, and the pressure of the increast volume of blood and the effusion from it on the terminal nerv fibers, causes pain. The fourth symptom, heat, is variously explaind.

There ar two ways in which excess of blood can occur at any given point:

First—By sending more than an ordinary amount of arterial blood to this point in a given time, and

Second—By failure, thru weakness or resistance, to remove from the area thru the veins, all of the normal supply of blood after it has servd its purpose and should be returnd to the hart for purification. This results in the presence of an excess of arterial blood in the arteries and capillaries, or the retention in the affected area of a quantity of venous blood, and serum which is crowded out thru the capillary walls into the surrounding tissues.

In both conditions the result is practically the same, except that the serum from an arterial congestion is cleaner, purer, and more plastic, and the adhesions ar stronger, while

the serum from the venous blood is much less plastic, adhesions ar less likely to form, and if they do they ar more easily broken up and cleard away.

This less plastic material, being less resistant, is more liable to be converted into pus, and abscesses often form in the center of large effusions.

Inflammation has been generally divided into *acute* and *cronic,* indicating rather its *duration* than its nature or caracter. Also into *activ* and *passiv,* indicating the *speed* of its development, but I hav taken the liberty of using the terms *Hyper*-static and *Hypo*-static, as indicating the condition of the body as to vitality, and the composition of the product of the inflammation, the exudate, also the possible effect of this exudate upon the body in general, or upon the part invold.

We speak of the Sthenic and Asthenic conditions of the body, meaning a condition of normal vitality, and one of subnormal vitality, but when any condition or substance produces sufficient disturbance in the body, it either results in an *increast* or *diminisht* activity, a *hyper*-static or a *hypo*-static condition. As the hyper-static disturbance shows all symptoms of an ordinary, acute inflammation; and as the hypo-static condition or disturbance shows a similar increase in the amount of blood in the affected area, with the attendant heat, swelling, redness, and pain, tho usually in a less degree; this condition should also merit the title of an inflammation. But the details of the pathological condition ar entirely different, also its progress and its liabilities, and the prospect of the development of other conditions which ar often listed as diseases, but ar actually the *result* of disease.

Hyper-static inflammations ar often limited as to duration, and self-correctiv, but hypo-static ar self-productiv, second-hand, and seldom self-correctiv.

Hyper-static develops in an ordinary helthy body to dispose of some external influence from climate, temperature or infection; Hypo-static develops from a sub-normal condition, fysical inability from the local pressure, or interference with circulation, or other fysiological functions. It would develop out of uncured diseases, or improper habits, or surroundings, or conditions of life.

As lightning never flashes from a clear sky, so cancer, tuberculosis and other lawless or tubercular disorganiza-

tions, abscess, and other subnormal conditions do not develop in *helthy* organs.

We wil often find a double condition in one case, that is, a hypo-static condition wil often be surrounded by a hyper-static condition, but this is only an effort of nature to get rid of a bad tenant; to clear away the hypo-static condition that should not exist, and is not able to help itself out. This effort should be recognized and assisted; it does not require antiflogistic treatment, for it develops in proportion to the duty it has to perform, and wil subside when its work is done, or when the hypo-static condition is improved by appropriate treatment.

Hyper-static inflammation requires rest, quiet, soothing applications, and other anti-flogistic treatment for its correction until all excitement and abnormal activity of the arterial side of the circulation has subsided, and the exciting cause of the inflammation has been removed. Then comes a condition that must be reckond with, a situation which is to blame for so many of the cronic diseases and handicaps of life. The *congestion subsides*, but is not readjusted to normal; effusions hav been deposited which soon become adhesions, and either by their presence and pressure, interfere with normal circulation, or by tying up some tendons, ligaments, or muscles limit or arrest mobility to a greater or less extent.

Normal activity and ability ar impeded and a retrograde metamorfosis is begun, which wil continue thru life. This secondary condition is always attended by a certain amount of activity of the circulation which is attempting to clear away the foren matter, but usually fails, and actually ads to the pathological side of the situation, and out of this *tumors* and *cancers* develop. Here we find the *hyper*-static followd by the *hypo*-static, and that followd by progressiv degeneration, which is attended by a weak hyper-static attempt to clear away the local pathological condition, but fails to succede.

Every hypo-static condition or inflammation needs assistance—activity. It is loudly calling for help, and not for quieting or soothing treatment. If they ar carefully protected, immobilized by splints or plaster bandages, they must continue to degenerate in proportion to the degree of immobilization, *for their nutrition is impeded by the treatment.*

Garded activity, adjusted to the severity of the condition, but activity, motion, and *better venous circulation* ar the only avenues to cure.

The said motion must be confined to the lines and direction of normal joint action and the amount of it controld according to the severity of the condition, allowing it to be increast as the condition improves.

Hyper-static inflammation is not usually attended with suppuration; not until the structure involvd has become extensivly infiltrated with serum and the circulation has become so obstructed by local pressure that stagnation occurs, and it then becomes *hypo*-static—a condition which usually leads to suppuration.

A wound in the scalp wil heal almost in spite of inattention, and even sepsis; while a similar one in the perineum or the lower end of the leg wil persistently resist even the most perfect conditions and greatest skil. Varicosed veins in the legs wil develop ulcers on the shins, at the inner margin of the tibia. In the pelvis there wil develop a hypertrofied uterus and an ulcerated cervix. If these patients could remain inverted for a few weeks, the condition in the legs and pelvis would recover without assistance, but the injury to the scalp would resist during the period of the inversion, or fail to respond to our efforts to induce it to heal.

An articulation that is in a condition that is cald tuberculous is *hypo*-static, and *can never be restored to a condition of helth or usefulness by fixation or resection*, but garded activity along lines abov specified wil produce the best results, and often a complete cure can be brot about by the use of some local treatment which wil assist the efforts of the circulation to clear away the accumulated venous blood, and the serum which has been crowded out thru the walls of the capillaries by the pressure of that accumulation.

This can be accomplisht by the careful application of a pressure bandage from the tip of the extremity toward the trunk, far enuf to include the affected joint, and a gentle, but thoro massage of the whole extremity, beginning at the distal end and working toward the body. We wil soon discover that the enlargement at the joint is due to a periarticular venous stagnation and serous effusion, and not an intra-articular hyper-static inflammation with acute distension of the capsular ligament, altho there may be some ar-

terial activity in the surrounding tissue making the effort to get rid of the local condition.

Fixation and extension wil be slow if it succedes at all, in relieving the pain and local congestion, but the facial expression and action of the patient wil immediately show a *relief from pain* after the application of a snug (not tight), bandage, and placing the extremity in a comfortable, slightly elevated position on a pillow or splint. Within twenty-four hours the bandage wil become loose, the patient comfortable, and the thermometer wil show a long stride toward normal, if it has not actually arrived at that point. A lost appetite wil return, and a badly coated tung wil rapidly become clean. Moderate, controld motion in such a joint wil gradually become painless, and if carefully treated wil gradually progress to cure.

A *varicose ulcer* wil resist all forms of local treatment until the venous stagnation of the whole leg is cleard away, and then it wil heal "while you wait."

An ulcerated uterin os wil only improve after the hypostatic congestion of the uterin body abov it, and of the whole pelvic cellular tissue around it, is equally disgorged, the ulcer is only a *result*, not a disease.

Reumatic joints, and tubercular joints and spines always go deeper into disease by the fixation or rest treatment; they present hypo-static inflammation, and a normal static circulation must be establisht by elimination of venous blood and exudate before resolution can be obtaind.

I could go on indefinitly citing conditions that illustrate the idea, but we wil always find that in some way *hypo-static* conditions *must* become *static* before disease can become converted into helth.

A varicose ulcer surrounded by tissue saturated with serum, and stagnated devitalized venous blood cannot heal; a distended, exhausted and edematous lacerated perineum cannot unite by first intention, however perfectly co-apted and stitcht, until the tissue to repair or unite is supplied with a certain amount of clean, pure arterial blood, and that can only occur when the useless material is cleard away out of the *venous* side of the capillaries.

The pelvic organs ar at the lower extremity of the circulation in the torso, and the ankles at the lower end of the circulation in the legs. These ar the points where the blood which leaves the hart with the force of the hart's action

behind it makes the turn and must be returnd thru the veins to the hart by some force other than the hart's action, *for the influence of the hart action is not continued thru the capillaries.* This other force which, as indicated abov, is a *vis-a-tergo* can only be muscular action and influence of gravity by change of position. In the legs and in the uterus the ulcer is caused by the *varicosis* and cannot be cured without first getting rid of the varicosis.

Materia Medica is a very important factor in the armamentarium of the physician in the adjustment of the different functions of the body thru the nervous system, and the remedies might be divided into three classes, the *hyper-static, hypo-static* and the *organic or chemical,* illustrated, *First* by Aconit and Belladonna, *Second* by Gelseminum and Ignatia, and *Third* by the Calcarias, Kalies, and Sulfur. But, as a stick behind the door wil prevent shutting or opening it, so a hypo-static effusion wil be a mecanical and material obstruction to any effort at *cure,* and our cases wil drift away from us and we wil be pronounst *incapable,* if we do not clear up a loose, hypo-static condition.

It is said that we should concentrate more and do better work, but *the treatment of inflammation* must be the problem of every specialist, as wel as of the general practitioner, however limited his sfere of action; and the kind of inflammation one has to treat only differs from any other in the *anatomy* of the organs involvd, and the evolution of its difficulties, on its personal function or fysiological action.

When we fully realize that a pain at one point may be telefoned over from some other, and we may hav to go there for or with our efforts at treatment, we wil better realize that the more thoroly one is "a Jack of all trades" the better master he is of one.

The expression—*Garded Mobility*—used in connection with the treatment of tubercular joints and other hypostatic conditions should be taken in two ways:

1st—The direction of the mobility should be so garded that it shal be in the direction of normal fysiological action, so that all muscles and other structures surrounding the joint shal be moved as they would be in a normal, helthy joint; and

2nd—The amount of the motion should be garded so that it shal assist the working out of the accumulated venous blood from among the tissues in the involvd area, and the admission of an amount of arterial blood sufficient for the

proper nutrition of those tissues. The object is to "rid the house of a bad tenant," and to bring in a new one.

In the *beginning* the treatment should be fairly thoro tho careful, and as progress is made, greater care and less frequent treatment until the "bad tenant" is gone, and the new one fully instald.

The difference between the venous and the arterial, or the hypo-static and hyper-static congestion can be redily determind by the color and tension of the tissues.

The *hypo*-static is dul in color, and boggy, or doughy to the touch, while the *hyper*-static is brighter in color, and more elastic. The one can be pitted by light pressure, and the other can not.

PART SIX

ZONE THERAPY (FitzGerald)

GENERAL DISCUSSION

Zone Therapy is a system discoverd many years ago by William H. FitzGerald, M. D., of Hartford, Conn. Dr. FitzGerald is a graduate of the University of Vermont and he spent two and one-half years in the Boston City Hospital. He servd two years in the Central London Nose and Throat Hospital, England, and two years in Vienna where he was assistant to Prof. Politzer and Prof. Otto Chiari, men wel known in medical literature. For several years Dr. FitzGerald was senior Nose and Throat surgeon of St. Francis Hospital, Hartford, Conn.

Altho Dr. FitzGerald specializes in diseases of the ear, nose and throat, yet he is what can be cald "an all round medical man." While working at his specialty, he observd that making pressures over certain parts of the body would enable him to do minor operations on the nose and throat without using cocain or any other local analgesic. At times he was successful in this and at others he was not.

Being of an inquiring turn of mind, Dr. FitzGerald began systematically trying to find out why he would at times be able to do an operation on the nose and throat without giving the patient any pain and at other times a like operation on another person gave pain. He discoverd that the patient had either made pressures on certain parts of the hand while being operated upon, or he himself in examination had made pressures over certain areas that inhibited pain in other areas. Little by little he began to trace out these locations and systematize them. For several years he carried on this work in his offis with remarkable success until it was "the talk of the town."

He related some of his experiences to dentists with whom he was acquainted, and they began using his method of pressures over selected areas for drawing, filling, or other work around the teeth where they usually employd

hypodermic injections of cocain, novacain, or some other analgesic.

About this time Edwin F. Bowers, M.D., the wel known medical critic and writer of New York City, herd from an acquaintance of the work Dr. FitzGerald was doing. Dr. Bowers, being "a live wire," immediately went up to Hartford to investigate this novel method of producing analgesia. After a long and thoro investigation, Dr. Bowers concluded that he would write a popular article regarding Dr. FitzGerald's work in order that the public might be made cognizant of the new method of relieving themselvs of pain. This method of analgesia had not yet been cristend, so Dr. Bowers cristend it ZONE THERAPY.

It is now over five years since Dr. Bowers' first article on Zone Therapy appeard in the public press. This publicity of Zone Therapy was not done to laud its discoverer, Dr. FitzGerald, because he alredy had more than he possibly could do. Dr. Bowers was altruistic and put this system before the public for their own good. He knew that if the work wer not wel founded, its cristening would soon be followd by its obsequies.

The fact that today Zone Therapy is probably known more widely thruout the United States and all places where magazines and newspapers ar printed than any other single method of therapy, proves that the foundation of the work is solid.

One of the most disgraceful blots on the pages of organized medicin, or what is popularly known as "The Medical Trust" or the "Medical Oligarchy," is the fact that they hav apparently, in every way possible, tried to hinder the spred of the gospel of Zone Therapy. Had Zone Therapy been a plant that would soon wither, the "Medical Octupus" would never hav tried to crush it, but because they apparently saw in it a child of great vigor that was liable to educate the people into methods of *self-treatment,* they became alarmd and in various ways they hav heapt abuse upon those who practis this method.

It is a repetition of history in all advance in science, letters, and art, that the one who blazons the way is the one to go thru abuse and ridicule. Proper advancement, however, is like an overflowing lake on a mountain top—as it overflows it seeks its level and in so doing baptizes all vegetation in its path.

The fact that Dr. FitzGerald offerd to teach those who wer interested in the work *free of charge*, and the fact that he taut his patients how to use the method on themselvs and their household, all the more angerd the "Medical Serpent," until from its fangs flowd venom to destroy those whom it struck. This Serpent, however, misjudged its strength. Insted of hindering the progress of the advancement of Zone Therapy, it has been hastened until some of the very ones who condemd it the most ar now using it, altho using it like a sneak rather than coming out openly and giving Dr. FitzGerald credit for the discovery and honoring him for giving it gratis to the people.

Of course charlatans wil take up Zone Therapy the same as they have taken up drugs, surgery, electricity, and natural methods of all kinds, but *the value of a system is made no less valuable because it is used by dishonest people.*

Recently in a large medical gathering in the middle west where I was describing Zone Therapy, an "M.D." askt "What is to become of the medical profession if the public is taut how to cure their own diseases?" My reply was that no true physician was afraid to tel the public how to keep from being sick and if sick how to relieve themselvs.

Since Zone Therapy has become so popular, many make false claims about it, as they do about any other useful discovery, and say that they "discoverd" the work. Others of a jelous disposition say that the work was discoverd by a certain Frenchman. Others say the work was discoverd by some Hindus and that "it was re-discoverd by Dr. FitzGerald." Others ar so bold as to say that *they* first discoverd the work and that Dr. FitzGerald "stole" the discovery from them.

Mapping out the body into five zones on each side of a median line is Dr. FitzGerald's system.

There hav been others who hav used pressures for the relief of pain but there was no *system* regarding its use. Pressure was made over certain nervs for dedening the pain in areas supplied by those respectiv nervs. As far as I can find, no one before Dr. FitzGerald ever mentiond that pressure on the little finger would make the pinna so insensible that pins could be put thru it without any particular discomfort. Neither hav I ever found any evidence that any other person used pressure over the toes as an analgesic for minor operations around the genitals; nor pressure over

the thum, first and second fingers for extracting foren bodies from the eye without the patient even winking.

Any system that has been thrasht out by critics and seudo-critics and proved to be reliable, is bound to hav supporters who at first ridiculed the work. It seems to be human nature for a certain class of people to ridicule everything new and, whether it turns out wel or il, to say, "I told you so."

I was personally taut Zone Therapy by Dr. FitzGerald, altho some with whom I hav only a slight acquaintance claim that they taut me the system.

No doubt every physician and every layman can relate numerous instances where he has used Zone Therapy unwittingly, but that is no reason why he should say that he understood Zone Therapy before or that he discovered it. Every one knew that when the ball was thrown in the air it would come to the ground and that when the apple fel from the tree it would go to the ground, but it was Newton who began to investigate and find out *why* the apple fel to the ground insted of staying in the air. Seeing is not necessarily observing, and doing a thing without having some idea as to why it is done is not the same as doing it in a defined manner and with a certain, definit purpose.

For those who immediately say that this system of Zone Therapy is "all imagination" we hav only pity. Some say that they wil never acknowledge that Zone Therapy is anything but suggestion until it is proved that there ar intimate relations between one extremity of the body in a given zone and another extremity of the body in the same zone. They ar like the people who say they wil not believe anything in fysiology, chemistry or anatomy that cannot be shown.

I often ask such people if they ever tried to analyze the surface of a sidewalk, road or field over which persons had walkt to see if there wer any difference in the chemical constituents of one person's footsteps and another's. So far this is beyond the limits of human knowledge, yet dogs and many other animals wil follow a certain track for miles, and they wil do so even when blindfolded.

Caution should be used in accepting every new "fad" or theory, but I would rather be misled once in a while than to say that everything I did not understand was "imagination" or "suggestion." Because occasionally a wolf is in

sheep's clothing is no sign that all sheep ar wolvs. "Prove all things and hold fast to that which is good" is as applicable and pertinent today as it was when spoken by the old sage.

Zone Therapy has been proved of great value in the hands of intelligent and painstaking physicians, and it has proved to be of inestimable value to careful dentists.

I hav personally proved the efficacy of Zone Therapy and scores of my pupils hav proved it to be of great value in relieving suffering. If you do not obtain the same results as Dr. FitzGerald, and many others, do not condem the system but see whether you ar using it correctly.

Zone Therapy vs. Pressure Analgesia

Many appear to be of the opinion that *"nerv blocking"* or *pressure analgesia* is identical with Zone Therapy. This is an error. *Nerv blocking* signifies making pressure over a certain nerv supplying a certain area in which one wishes to produce analgesia.

Zone Therapy signifies making pressures or in other ways manipulating a given *zone* which is generally far removed from the site that one wishes to anesthetize or treat.

For example, pressure upon the dental nerv wil "block" the sensation to the teeth that ar fed by that nerv. By *Zone Therapy*, however, pain in that same tooth or area can be inhibited by pressures upon given fingers, toes, or other parts of the body that ar *in the same zone* as the affected tooth or teeth. It wil thus be seen that there is a wide difference between nerv blocking or nerv pressure and Zone Therapy.

Some writers, in discussing Zone Therapy, hav confused these two terms so that many ar now speaking of nerv blocking as Zone Therapy, but I hope this explanation and illustration wil help my readers to differentiate between the two terms.

That my readers may hav the very best there is written or said about Zone Therapy, I giv herewith a stenografic report of one of the first public lectures Dr. Wm. H. Fitz-Gerald gave on the subject.

ZONE THERAPY

By

WILLIAM H. FITZGERALD, M.D., Hartford, Conn.

In Zone Therapy we divide the body longitudinally into ten zones, five on each side of a median line. The first, second, third, fourth and fifth zones begin in the toes and end in the thums and fingers, or begin in the thums and fingers and end in the toes. The first zone extends from the great toe up the entire height of the body from front to back, across the chest and the back and down the arm into the thum, or *vice versa*.

The tung is divided into ten longitudinal zones, five on each side of the median line. Pressure or contact on the dorsal surface of the individual zones on the tung affects anterior sections of the zones of the body. Pressure or contact on the under side of the individual zones of the tung affects posterior sections of zones thruout the body.

The hard and soft palate ar divided into ten longitudinal zones, five on each side of the median line. The zones of the hard palate include the upper jaw. Pressure or contact on the posterior surface of the teeth and gums affect the posterior sections of the zones thruout the body.

The posterior walls of the farynx and epifarynx ar divided in the same way, and posterior pressure or contact affects posterior sections of zones; while anterior pressure or contact affects anterior sections of zones. Traction on the soft palate in the epifarynx affects the anterior zones, and traction on the anterior pillars of the fauces affects zones one, two, three, four and five, especially in arms and shoulders in the posterior section of zones. Pressure on the anterior surface of the lips and the anterior surface of the anterior pillars of the fauces affects the anterior surface of all zones. Pressure on the posterior surface of the lips affects the posterior sections of all zones.

Pain in any part of the first zone may be treated and overcome, temporarily at least, and often permanently, by pressure on all surfaces of the first joint of the great toe, or the corresponding joint of the thum. Should the pressure be limited to the upper surface of the great toe, the anesthetic or analgesic effects wil extend up the front of the body to the frontoparietal suture. They wil also extend across the chest and down the anterior surface of the first zone of the arm and thum, and often the thum side of the index finger. Should pressure be made on the under surface of the great toe, the effects wil extend along the first zone in the sole of the foot and up the back of the leg, thigh, body and hed in that zone to abov named suture; also across the back and down posterior surface of the first zone of the arm and thum, and often the thum side of the index finger.

Firm pressure on the end of the great toe or tip of thum will control the entire first zone. Firm pressure on the tips of the fingers or toes control individual zones. Lateral pressure on thums and fingers or toes wil affect lateral boundaries, also transverse extensions to nostrils, lips and ears.

A limited amount of anesthesia may often be establisht by pressure over any resistant bony surface, in any zone comprest, and often the mere momentary contact with the galvanic cautery, or pressure with a sharp-pointed applicator, or with the thum or finger-nail, wil produce the same result. Contacts, especially with pointed instruments, may be momentary but manifold, altho prolongd contacts ar often necessary.

Prolongd pressure with an aluminum hair comb is fast becoming a popular method, but similar pressures with nails of thums and fingers ar likely the method Nature intended. Pressure with elastic bands on fingers, toes, rists and ankles, as wel as on nees and elbows, ar often useful in overcoming pain in an individual zone or group of zones. If these pressures ar resisted by pathological processes elsewhere in zone or zones, pain is sometimes excited.

Pain anywhere in any zone may be overcome more quickly by pressure with an applicator, or with cautery contact at certain points thruout corresponding zone or zones in mouth, farynx, epifarynx and nose; but the finger

and toe pressures may be relied upon very often, and what applies to one zone applies to all.

Pressures average from one-half minute to four minutes or longer, depending upon the susceptibility of the patient. If, for example, your patient has pain in the first zone on the left side of the jaw, upper or lower, it is overcome, temporarily at least, by firm pressure on great toe or thum. The patient may exert the pressure himself, but the operator or an assistant wil do it more expeditiously. This pressure may hav anesthetized the incisor region sufficiently for the painless extraction of the incisor and biscupid teeth on the left side. However, it is usually necessary to supplement this pressure, for operativ interference, by pressure on the lip or cheek, and at various points of the jaws. The first thum or great toe zone, the left for instance, always includes the left incisors and occasionally the cuspid teeth.

The second zone, as a rule, includes the cuspid and the bicuspid teeth. The third zone includes the two molars, and the fourth zone the third molar teeth. Pressure with the thum or index finger, or cautery contact on the upper or lower jaw in these zones, wil relieve pain if present.

Pressure or cautery contact on the buccal surface of the jaws control anterior sections of zones, one, two, three, four and often five; and pressure or cautery contact on lingual surface of jaws control posterior sections of abov zones. Zones four and five usually merge in the hed. Pressure with the thum or finger on inferior dental and lingual nervs, at inferior dental foramen, wil often anesthetize that half of the jaw, and to a greater or less extent the entire half of body on side compresst.

Because of the anastomosis of nervs at the median line of the jaw, this pressure occasionally causes an anesthesia of a part or even the whole of the opposit side of the jaw, but this is the only instance thus far notist where anesthesia thru pressure crosses the median line of the body.

Shortly after dinner the second evening of the meeting of The Northeastern Dental Association, October, 1914, a doctor of medicin and his friend, a dentist, came to our rooms and askt if they could not be "shown" some of the possibilities of Zone Therapy. "Show us, for instance, the connection between the fingers and the jaws." "In other words, you say that pressure brot to bear on a thum or finger wil hav an anesthetic, or at least an analgesic effect,

on a corresponding section or sections of the jaws. "Show us!" One of our party said he was redy to accommodate them. We suggested that they "show" one another; and this they did, after a little instruction, to their entire satisfaction.

At clinics of dentists and physicians in many cities, before and since the Northeastern meeting, we hav had the plesure of seeing them demonstrate among themselvs some of the possibilities of Zone Therapy. The skeptical physician or dentist, if he desires, can in two or three minutes be convinst that there is at least something in Zone Therapy. The fact that often pain may be overcome in any part of the body by mere finger pressure, or pressure with applicators with or without medication, or thru cautery contact, can be easily demonstrated.

Heat or cold waves in varying degrees, depending upon the solution or instruments used, may often be dispatcht to extremities from mouth, nose, etc., and like waves of heat or cold wil manifest themselvs in the mouth, nose and farynx of susceptible individuals from pressure or contact on the extremities. The most susceptible patients wil describe them accurately. The majority of patients say that, while they ar unable to detect sensations as abov, their pain is disappearing or has alredy disappeard. Patients who ar the most susceptible to pressure or contact wil trace heat or cold from an individual hair of the hed or an eyelash to margin of finger-nail, or toe-nail, and if a hair or eyelash be quickly puld out, the sensation of numness is often quickly registerd thru the finger-nail or toe-nail of the invaded zone.

Pressure or contact upon the occlusal edges of the teeth affect the innermost parts of practically every bone in the body. We believe that the teeth, being the most accessible, ar the natural gardians of the bones thruout the body. The heat waves from the application of a fine-point cautery contact on the occlusal edges of the teeth, ar dispatcht thru the centers of all bones, and their therapeutic effect is disseminated thru the bones and tissue of the zones treated. Naturally, the therapeutic effect is less markt as the surface of the body is approacht.

Pressure or contact on the anterior surface of the teeth affects the anterior surface of the bones in the anterior sections of bones, and to a greater or less extent the tissues of the same zones in the corresponding sections. Pressure or contact on the posterior surface of the teeth affect the pos-

terior surface of the bones in the posterior sections of zones treated, and to a greater or less extent the tissues of the same zones in the corresponding sections.

A normal tooth wil not be excited by a fine-point cautery contact. On the other hand a fine-point cautery contact wil excite an infected tooth. Our crucial or cautery test may make apparent certain defects in teeth diagnosed as sound by other methods. It has been suggested that repeated cautery contact might, thru shock, occasion eventual deth of the tooth. While we do not consider this at all likely when fine points ar used, it may be wel to bear it in mind as a possibility.

We doubt if there be a physician or dentist present who cannot recall at least one of his patients, and probably several, who ar neglecting pathological changes in their jaws as they dred extractions or the sensation of the dental dril.

We believe it is the duty of the physician, or the dentist, to send for such patients and make clear to them the possibilities or even probabilities of such neglect. The question is not wil Mr. A. think we need the money if we send for him, but what wil Mr. A. think when he discovers that he has been neglected.

As physicians of any scool, it would seem clearly our duty to examin carefully the mouth and nostrils of the patient and to hav pathological changes, if found therein, corrected coincidentally with whatever other treatment may be deemd necessary.

An asset not generally recognized in normal occlusion of a natural set of teeth, is the ability of the patient to relax practically every part of the body thru firm, biting pressure for two or three minutes on all surfaces of the upper and lower teeth. In this manner pain may frequently be relievd in any section of a zone, or group of zones, thruout the body, and occasionally even anesthesia may be induced thru firm occlusion of the teeth for two or three minutes in these zones. This is at least one reason why all the teeth should be preservd if at all possible, and why normal occlusion should be brot about if it does not alredy exist. If one be deprived of the third molar teeth, for instance, his ability to prevent, relieve or overcome pathological conditions in the fourth and fifth zones is restricted; and this naturally applies to the various individual zones or group of zones where teeth hav been extracted.

Catarral defness, with accompanying tinnitus aurium, is usually benefited by firmly compressing the occlusal surfaces of the third molar on one or both sides of the jaws (the latter where both ears ar involvd), or by cautery contact on the third molar areas. This pressure or contact may be supplemented with good effect by firm pressure with a curvd applicator, or finger tips directly behind third molar, at the angles of the jaws in the mouth. Pressure on the lower jaw at the angle wil affect the lower half of the ear. Patients who ar able to follow sensations, as elsewhere mentiond, ar very certain concerning this.

Think of overcoming unilaterial tinnitus aurium, even temporarily, by raising rather forcibly the finger-nail of the ring finger on the side affected, at its center, with a blunt instrument, or with the thum nail of the opposit hand. Also think of diminishing the objectionable sounds stil further by raising the nail of the third finger at the outer edge; or *increasing* said sounds by firmly raising and holding the nail at the *inner* corner from one-half to three minutes. All cross zones influence the ears to a greater or less extent.

For either unilateral or bilateral tinnitus aurium, ask your patient to raise forcibly the end of the third finger-nail of the right hand at the center with the corresponding nail of his left hand in a similar position, and you may marvel at the result. Don't overlook toe-nails for the abov effect, and remember that the hearing may be improved thru similar procedures.

You would hardly believe that offending corns or warts or bitten finger-nails, where inflammatory processes hav been excited, may be responsible for reumatism or neuritis, but we ar daily proving such to be the case.

Toe-nails and finger-nails must be respected and as wel taken care of, for helth's sake, as any other section of the individual zones. There is not a section of a finger-nail or toe-nail that may not affect, either plesantly or unplesantly (as under stimulation or pressure) the most distant parts of the body, and even the hair.

All zones must be free from irritation and obstructions to get the best results. For instance, if there be pain in the hed, thorax, abdomen or extremities in one or more zones, it may be relievd or quite overcome by pressure on resistant surfaces anywhere in the zones affected. If the pain be relievd for a few moments only, and repeated pressures do not overcome it, it is safe to assume that the pain is due

to some abnormal pressure or irritation, as pus, impactions, necrosis, etc., somewhere in a zone or group of zones, which demands medical or surgical interference.

We ar repeatedly cald upon for the theory of Zone Therapy. Many theories ar interesting but not conclusiv, and rather than be obliged to retract theories, we ar not going to attempt to advance them, except very superficially, in accordance with clinical facts. It is certain that control-centers in the medulla ar stimulated, as has been suggested, but I believe that it is *shock* more often than stimulation. Some theorists hav pointed out, perhaps rightly, that "these functions may be carried out by the pituitary body thru the multiple nerv paths from it."

We know that we induce a state of inhibition thruout the zone where pressure is brot to bear. We know that when inhibition or irritation is continuous, many pathological processes disappear. We ar certain that lymfatic relaxation follows pressure. The theory advanst by Dr. Bowers is, "that inasmuch as there ar admittedly ultra-microscopic bacteria, it is more than likely that in the light of this work there ar ultra-microscopic connections analogous to those we call nervs." Man is admittedly of chemical formation controld by electrical energy, or "electronic vibration."

Let the physician or the dentist, who ascribes these fenomena to suggestion, attempt to relieve an aking, left incisor by pressing the little finger of the right hand of his patient, or exercize his persuasiv powers on a throbbing molar by pressing the thum. He wil find himself up against a stone wall so far as results ar concernd, for only by exerting pressure on the *proper* zone or zones wil the pain disappear.

Anticipating such contentions, and to avoid the merest hint at suggestion, we hav purposely refraind from giving the patient any idea that we wer even contemplating the relief of pain and the first and only suggestions hav been from the patient. He wil tel that he experienst much pain in his jaw, eye, small of back, nee, foot or shoulder, etc., before pressure was made on his fingers, teeth, or elsewhere, but wil ask, "Where has the pain gone? Hav you done anything to relieve it?"

What interests us most as physicians and dentists is the possibility of demonstrating, on practically every one of our patients, the connection between the toes, fingers, teeth, nostrils, eyes, etc. This establishes the incontrovert-

ible fact that the medical and dental fraternities must work together if they ar to accomplish all that it is possible to accomplish in combating disease; for it clearly demonstrates that foci of infection, however minute, in the mouth may be responsible for pathological changes in practically every section of the body.

Pathological conditions from mere irritation in nose, epifarynx, farynx, mouth, vagina, rectum, etc., may be responsible for not only annoying local manifestations, but obscure pathological changes in the most remote sections of the body; and their course can usually be traced thru an individual zone or group of zones. There is not an existing pathological condition that cannot at least be relievd, and a large proportion can be cured by Zone Therapy.

The abov makes clear how necessary it is that the physician and surgeon should be capable of diagnosing and treating disease in all parts of the body, especially if his practis be limited to the country where he may be unable to consult with specialists. If the pathological condition he has treated does not place his patient in normal fysical condition, the case should be referd to the specialist or dentist, for all parts of the zone or group of zones must be free from obstruction and irritation to achieve lookt-for results.

Many dentists hav written us stating that they hav been successful in establishing anesthesia thru pressure in at least fifty per cent. of their cases. Patience and perseverance, and the observance of a few general instructions, wil enable them to improve their tecnic and their success wil correspondingly increase.

Perhaps some hav not been successful because of lack of perseverance; and some hav not attempted to anesthetize thru pressure, being influenst and strengthend in their skepticism by individuals interested in the sale of apparatus for the administration of anesthetics, or in some proprietary article of anesthetic persuasion. These wil soon be convinst that *pressure anesthesia has come to stay.*

There wil be no soreness or lameness of the jaws due to this form of anesthesia following operations, and hemorrage wil be markedly lessend, if instructions be followd. If soreness or lameness follow, it would be easily overcome by pressure on appropriate thum or fingers. The discomfort following a laceration of the jaw, or the prick of a hypodermic needle, is overcome in the same way, so that even those who do not favor pressure as an anesthetic for

operativ procedures should, from humanitarian motivs, recommend it for its analgesic and healing properties.

Some Important Findings in Zone Therapy

We ar certain of analgesia in the majority of cases over all parts of the body, from pressure or cautery contact in the mouth, farynx, epifarynx, and nose; and analgesia in a large percentage of cases over the entire body, from pressure or cautery contact on extremities.

Zone Therapy demonstrates the co-relation of all parts of the body, also the manner in which pressure or contact upon certain zones is effectiv in the relief of pain or disease.

We hav proved that it is possible to anesthetize certain patients, from the hed thruout the extremities, by pressure on resistant surfaces of hed; by pressure in the mouth, nose, throat, farynx, etc. in individual zones or groups of zones; and from extremities to hed by pressure, contact, etc. on extremities.

If pain exist in the second zone of the left side of the upper or lower jaw, for example, and be overcome by pressure on the top or front (commonly known as back or dorsal surface) of the left, index finger, the affected area is certain to be found on the front of a left incisor or cuspid tooth, or all three. If pressure with the thum or fingernail, or sharp probe, on that area do not overcome the pain, but abov pressure or contact on lateral areas do, it may unhesitatingly be said that the irritation is lateral. If it be necessary to resort to pressure, or pointed contact, on palmar surface of index finger to overcome the pain, then we ar certain, even without examining the teeth, that the abnormal condition wil be found on the posterior surface of tooth or teeth.

Diagnosis of pain, or its cause, may be workt out quite as perfectly over or thru any zone or part of zone. If the patient complain of pain and indicate that the right eye is involvd, and you overcome the pain by pressure on the front of the right index finger, it is absolutely certain that this disturbance is excited by congestion or irritation, in the anterior section of the zone; but if it be necessary to look to the palmar surface of the index finger, the cause is certain to exist in a posterior section of zone or zones.

While we ar certain that Zone Therapy has come to stay and wil become a popular method in anesthesia and in analgesia, being applicable to all forms of dentistry, we do not believe that any one form of anesthetic wil "corner the market." When humanity understands it and when the physician and dentist clearly see the necessity of keeping the jaws at all times in firstclass order, the demand for anesthetics of many varieties is certain to increase. Zone Therapy wil teach the physician to examin the teeth carefully, even before he looks at the tung of his patient. Zone Therapy givs medicin and dentistry a status that the microscope does not.

We hav never suggested this work as a panacea, but finding it *helpful* in the treatment of human ils, we consider it an asset to our knowledge of medicin and surgery, and hav been glad to offer it gratuitously to physicians, surgeons, and dentists, to make whatever use they wil of it in the practis of their professions.

Figs. 311 and 312 represent diagramatically the method of dividing the body into zones both anteriorly and posteriorly. Fig. 313 shows the dividing line between the anterior and posterior zones. Notis that the upper surface of the hand and foot belong to the anterior surface of the body and that the under side of the hand and foot belong to the posterior part of the body. For example, if you stand on your toes, the tops of your feet ar anterior and the soles ar posterior. If you stand on the tips of your fingers, the tops of the hands ar on the front or anterior part of the body and the palms ar toward the posterior part of the body.

Recapitulating what has alredy been said regarding the zones, and to more fully describe the illustrations, I might ad that the *anterior surface* of the body is divided into zones, commencing with the inside of the great toe and with the center of the nose as a median line, and numbering 1, 2, 3, 4, 5 in each direction.

For the *posterior surface* of the body, the zones commence with the inner side of the great toe and with the center of the back of the hed as a median line, and number 1, 2, 3, 4, 5 in each direction.

We speak of zones 1, 2, 3, 4, 5 respectivly on the right side of the body and zones 1, 2, 3, 4, 5 respectivly on the left side of the body.

The numbers in Figs. 311 and 312 indicate five lines there markt out, and these lines represent the *center* of the respectiv zones. For example, 1, represents the center of zone 1, and it passes thru the center of the great toe and the center of the thum, while the *entire great toe and thum are in zone 1.*

I hav designd these figures in this manner purposely to avoid making six lines, which would be confusing to the student.

It wil be notist that each shoulder and axilla ar in five zones.

The tung, hard palate, naso-farynx, oro-farynx, sublingual region, teeth, penis, clitoris, vagina and uterus ar in *ten* zones, five on each side of its median line.

The middle ear is in zone 4.

The Eustachian tube and middle ear combined ar in zones 3 and 4.

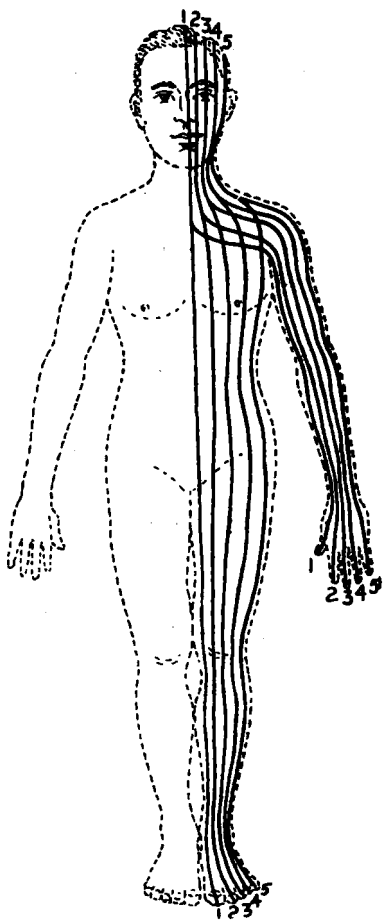


Fig. 311. Diagram of *Anterior Zones* on one side of the body.

Both right and left sides of the body ar the same.

Each numberd line represents the *center* of its respectiv zone on the anterior part of the body.

The tung, hard and soft palate, posterior wall of the naso-farynx and orfarynx, and the generativ organs ar in ten zones, five on each side of the median line.

The middle ear is in Zone 4.

The eustachian tube and middle ear combined ar in Zones 3 and 4.

The upper surface of the tung is in the anterior zones.

The teeth ar in the respectiv zones as indicated by passing a line antero-posteriorly thru the respectiv zones.

The viscera ar in the zones as represented by a line past antero-posteriorly thru the respectiv zones.

The upper surface of the tung is in the anterior zones, and the under surface of the tung is in the posterior zones.

The teeth ar in ten zones, each one in the respectiv zone or zones as indicated by passing a line antero-posteriorly thru the respectiv zones as depicted on the surface of the body.

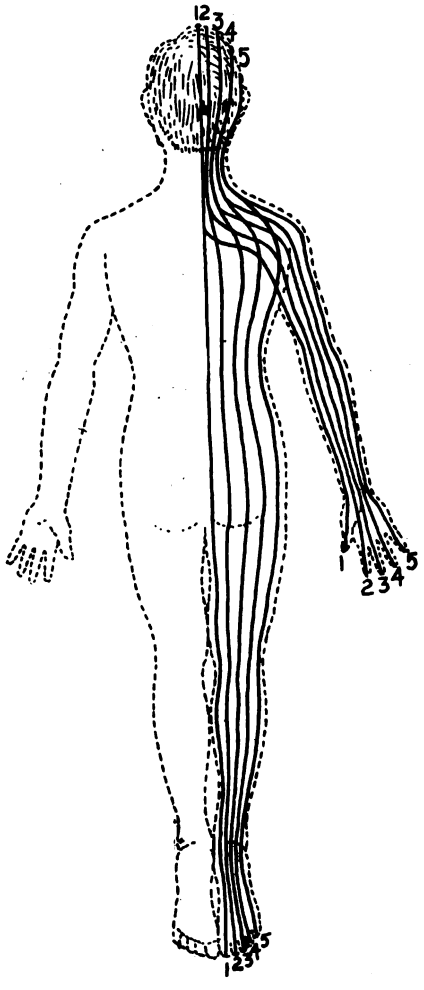


Fig. 312. Diagram of *Posterior Zones* on one side of the body. Both right and left sides of the body ar the same.

Each numberd line represents the *center* of its respectiv zone on the posterior part of the body.

The under surface of the tung is in the posterior zone.

The normal viscera ar in zones as represented by a line past antero-posteriorly thru the respectiv zones as delineated on the surface of the body. For example, the liver is in five zones on the right side of the body and zones 1, 2, and sometimes 3, on the left side of the body. (If ever in doubt regarding the exact zones in any part of the body when practising Zone Therapy, take in one zone more than necessary rather than one zone less than necessary.)

The zones ar mapt out and numberd the same on both sides of the median line of the body. For example, right and left sides of the anterior surface of the body ar the same, and the right and left sides of the posterior surface of the body ar the same.

The line drawn from the apex of the hed thru the coronal suture down over the center of the shoulder and thru the external malleolus approximately represents the dividing line for the anterior and posterior zones, as shown in Fig. 313.

In treating any of the viscera, it is usually better to attack both the anterior and posterior zones simultaneously.

Altho this method of designating the zones is rather crude, yet it is the most practical method. As I hav before mentiond, there ar innumerable zones in the body but for practical purposes this method, originated by Dr. Fitz-Gerald, is ideal.

MY FIRST EXPERIENCE IN WHAT I LATER KNEW AS ZONE THERAPY

Little by little as I was working out new methods in diagnosis and therapy, I discoverd that when giving stimulation in definit areas, I obtaind definit results, while if I used stimulation, for example electricity, with one electrode over one area and another electrode over another area not in what is now known as the same "zone," I did not obtain uniform results.

About four years ago I had occasion to treat a case of persistent sciatica. For this I used the LeDuc current, which is a galvanic current interrupted in a special manner. When placing both electrodes in the same "zone" the patient was almost immediately relievd. It then occurd to me that I obtaind the same results about nine years ago when treating a person who had been "all over the world" to be cured of sciatica. At that time I did not realize that I was using "zone therapy" by electrical means.

Many years ago, while experimenting on the anesthetic effect of the Tesla current, I observd that by giving a current that produced a severe shock to my fingers, I was able to pierce them with needles and not feel them. Stil I did not realize just why these results wer obtaind.

EXPERIENCE WITH ANIMALS

Some years ago one of my horses backt into a window and got a large piece of glass into the sacral region. I tried putting her into a narrow stall and tying her legs so I could operate, as a large incision had to be made to extract the foren body. Nothing would avail. Finally one of my men said if I would let him tie a slipper-noose, which he cald a "twitch" around the horse's nose and hold it, he thot I could operate. He made this "twitch" out of a piece of small rope, put it on the horse's nose, and I started to operate. The result was a collision between the horse's

hind legs and my abdomen. I thot I would hav to obtain the servises of a veterinarian, but told the man to put the "twitch" on again, tie it tightly, and hold it for two or three minutes. I percht on a box in a stall at one side so I would not be kickt, and to my surprise I made a large incision and took out the glass and the horse did not flinch. I realize now that I used the "zone anesthesia," as the sacral region and the nose ar in the same zone. At other times I hav had occasion to do minor operations on cows and pigs and hav been able to do them by putting a "twitch" on the nose and the animals did not seem to experience any pain—in fact they would begin to eat the moment the "twitch" was removed.

I hav seen young stallions castrated in this manner without hardly flinching, and hav seen the same with young pigs. I hav observd that this pressure had to be on for two or three minutes *before* the operation began. I never could explain this only I thot it distracted the attention of the animal so much that it did not feel the pain of the operation. Some think the "twitch" causes so much pain in the nose that the animal cannot feel any other pain. This I think can be disproved by watching the animals while the ligature is on. They do not seem to be in pain, and the moment it is releast they begin to eat.

My Findings Explaind

Later I had the plesure of meeting Dr. William H. FitzGerald and hearing him explain Zone Therapy. I went to Hartford to look into his system more thoroly. It did not take me long to decide that there was something to it, and then I realized that I had really been using "zone therapy" before, but did not know what I was doing or how I was obtaining the results.

As I began to look for the reason for these results, I thot of my study in embryology, and it seems now quite clear to me why we hav these definit zones. Insted of having ten zones in the body longitudinally, we doubtless hav countless numbers, but I think Dr. FitzGerald's method of designating these zones simplifies the work very much.

If we watch the development of the embryo chick from the primitiv streak onward, we can very redily see why stimulation, or shock, on the inside of the great toe wil influence the same area on the inside of the thum, or

anywhere along that zone in the body. This hypothesis may be wrong, but it seems quite clear to me.

As soon as I left Hartford, after being a few days with Dr. FitzGerald, I telefoned to a New York doctor whom I knew had cald on Dr. FitzGerald about a year previously, and he soon met me at my hotel. I askt him what he thot of zone therapy and he said it was of course "nothing but suggestion." As I was talking with him, I took hold of the thum and index finger of his right hand and began pressing on it, at the same time talking to him. I did not giv him a hint as to what I was trying to do. After about two minutes I stopt the pressure and took a metal applicator from my pocket and laid it on his right eyeball. He did not flinch and could not believe what I was doing. I tried laying the applicator on the other eyeball and he then understood that his right eyeball was anesthetized. I then took some steel pins that wer sterilized and stuck them in his face and told him to look in the mirror. He withdrew the pins and said he was satisfied and wanted to spend at least three hours with me to lern more about the work.

The same day I met a lady in the hotel who had a severe hedake. I exerted pressure upon the fingers in the indicated zone and within five minutes the hedake had disappeard. I had the same success in treating a toothake.

I then cald on a physician in New York who had previously been one of my pupils, and askt him if he knew anything about zone therapy. He said he did not, but had red in some of the journals about it and thot "it must be all imagination." I began holding his fingers and talking to him, but did not giv him any idea of what I was doing. I pretended I was trying to see how much resistance there was to his muscles. Within three minutes I laid a button hook on his eyeball without his flinching. I took a stickpin from his cravat and pusht it into his cheek and put several pins into his face without his feeling them. He could not bear the touch of a pin in any other zone. He cald his wife and she was horrified when she saw him so "stuck up." I withdrew the pins and sterilized his face. He is now a staunch believer in zone anesthesia.

At several of my lecture courses in Chicago and elsewhere, I had an opportunity to show these methods and made some very interesting observations. I found that light would not contract the pupil of the eye that had been at-

tackt thru the finger zones the same as the pupil of the eye that had not been so attackt.

There happend to be a doctor in one class who had been suffering all day from some object in the eye. Several doctors had mauld his eye until he would not let anyone else touch it, and when I saw him his pain was quite intense. I told him that I thot I could relieve the pain by pressure anesthesia thru the fingers. I did so to the surprise of all present. I then opend his eye and took from the cornea a piece of steel. He said he did not feel any pain and was very grateful.

I often askt if there wer any in the audience who doubted these methods. Several said they thot it was imagination and I askt them to come forward. Within a few minutes, by using pressure over the indicated zones, I had past pins into their ears, face, lips, tungs, and various parts of the body, which had been partially anesthetized by pressure upon the various digital zones.

One of the doctors in a Chicago class, who herd of this zone anesthesia, told me of an experience he had which might be of interest. He said that about two years previous he was suffering from inguinal hernia and a radical operation was advized. He went to the hospital and the anesthetist began to prepare him for the anesthesia. He told them that he wanted no anesthesia as he was going to hav the operation done without taking anything. The surgeon was loath to operate without some kind of general or local anesthetic, but he told them he wanted nothing as he thot he could control himself. The surgeon consented, but had redy cloroform and hypodermic needles with cocain, etc. He clincht his teeth and hands with all his might and put himself into as powerful a tension as possible for about three minutes before lying on the table. He then laid down, relaxt, and said "go ahed." From the beginning to the end of the operation, he said, all he notist was that there was something going on, but he felt absolutely no pain. I lookt at his teeth and saw that the occluding surfaces wer very good indeed, which accounts in a great mesure for the efficacy of the zone anesthesia.

Years before anesthesia was so wel known, I remember seeing surgeons do minor operations on individuals who would take no cloroform. Almost always the patients said they closed their teeth and held on to something or clincht

their hands, and then they could stand anything. In some instances they had corn cobs on which to clinch the hands. One of my preceptors cald attention to the fact that the jaws would not be so tightly set at the end of the operation as at the beginning.

I hav notist that boys in the country when going barefooted and walking on cobblestones could get a very severe injury to the feet and hardly know it, but when walking on sand they would notis a like injury a great deal more. I now think the cause of this was shock, or zone anesthesia. It seems that Nature has provided us with this method of anesthesia, but we ar too ignorant to understand it .

ZONE THERAPY—WHERE APPLICABLE

To enumerate the conditions in which Zone Therapy is applicable, would be to enumerate nearly every disease in the practis of medicin. The fact that Zone Therapy is applicable in all painful conditions, no matter from what cause, givs some idea of the scope of the work. Of course there ar some conditions where Zone Therapy wil bring about better results than it wil in others, and I might enumerate a few of them.

Hedake of almost any variety is greatly relievd, if not cured, by Zone Therapy.

Diseases of the *aural* mecanism, and many painful conditions of the *eye*, lend themselvs very kindly to Zone Therapy.

Toothake is one of the conditions that is benefited in a very remarkable manner by Zone Therapy.

Activ hypertrofy of the Schneiderian membrane, especially in *acute rinitis*, can be very quickly relievd by this method.

Painful conditions of the *throat*, including the *nasofarynx* and the *orofarynx* as wel as the *larynx*, in most instances, can be quickly relievd by this method.

Goiter can usually be aborted or cured by this method more quickly than by any other.

Pain in the neck caused by various growths can be greatly relievd by Zone Therapy.

Bronchitis, asthma, hay fever, hacking cof, irritations in the respiratory tract and *esofagus*, can be greatly relievd and in many instances cured by Zone Therapy.

Painful areas in the chest, be they muscular or organic, can be greatly relievd by this method.

Reumatism, lumbago, sciatica, coxalgia, neuralgia, neuritis of whatever variety, can in many instances be made perfectly painless by Zone Therapy.

Nausea, pains in the stomac, gastritis, enteric cramps, can be often relievd or cured by this method.

Pains in the pelvis, especially *uterin and ovarian pains*, can be greatly relievd and often cured by this method.

Dysmenorrea is one of the complaints that has won much fame for Zone Therapy.

Pains thru the bladder, prostate and *male generativ organs*, ar greatly benefited by Zone Therapy.

In short, I can say that any condition that givs pain can, in the majority of instances, be relievd by means of Zone Therapy.

As an *analgesic* method, Zone Therapy is without a peer.

As an *anesthetic* method, Zone Therapy is quite efficient.

ZONE THERAPY
A WEL-KNOWN EDITOR'S OPINION

The following is a wel known editor's opinion of Zone Therapy. About a year ago the associated "Sunday Magazines" and "Every Week" publisht a series of articles on Zone Therapy by Edwin F. Bowers, M.D., of New York. The following is a part of the comment by Mr. Bruce Barton, editor of these magazines.

"For almost a year Dr. Bowers has been urging me to publish articles on Dr. FitzGerald's remarkable system of healing, known as Zone Therapy. Frankly I could not believe what was claimd for Zone Therapy nor did I think that we could get magazine readers to believe it.

"Finally a few months ago I went to Hartford unannounst and spent a day in Dr. FitzGerald's offis. I saw patients who had been cured of goiter; I saw throat and ear troubles immediately relievd by Zone Therapy; I saw a nasal operation performd without any anesthetic whatsoever, except Zone Therapy; and—in a dentist's offis—teeth extracted without any anesthetic except the analgesic influence of Zone Therapy.

"Afterward I wrote to about fifty practising physicians in various parts of the country who hav herd of Zone Therapy and ar using it for the relief of all kinds of cases even to allaying the pains of childbirth. These letters ar on file in my offis.

"I anticipate criticism regarding these articles from two sources. First, from a small percentage of physicians; second from people who wil attempt to use Zone Therapy without success. We do not know the ful explanation of Zone Therapy, but we do know that a great many people hav been helpt by it and that it cannot possibly harm anyone."

The articles written by Dr. Bowers for the various magazines, as wel as much added matter by him and some original additions by Dr. FitzGerald himself, hav been publisht in a book entitled "Zone Therapy, or Relieving Pain at Home."*

*Publisht by I. W. Long, Columbus, Ohio.

PUBLIC BEING EDUCATED IN ZONE THERAPY

Before going into the tecnic of Zone Therapy from a physician's standpoint, and before explaining and illustrating the various appliances that hav been devized for use in Zone Therapy, I wil ad here an article that is now being publisht in some of our large magazines. Whether any physician wishes to look into the merits of Zone Therapy from a professional standpoint or not, it behooves him to at least know how the *public* is being educated along these lines. It is very awkward for a physician to hav his patient know more about some forms of therapy than he does, therefore I would advize my readers to carefully peruse the following article:

ALTRUISTIC MEDICIN

By EDWIN F. BOWERS, M.D.
Author of "Side-Stepping Ill Health," "Alcohol—Its Influence on Mind and Body," etc.

Many of the things which wer ancient history and regular routine to our grandmothers ar the basis of some of the greatest medical discoveries of modern times. For instance, remember how effectivly grandmother used to relieve croup by pressing her finger against the back wall of the baby's throat? And how she used to soften that dry, ringing cof that was epidemic among the youngsters about every so often by pressing with the broad handle of a tablespoon on the back part of the children's tungs? Didn't the "flem" "loosen" after this maneuver and didn't those dry, harsh cofs clear up?

Recall how she used to stop a nosebleed by pressing a piece of ice against the back of your neck, or else the big handle of the front door key if there wer no ice handy? And don't you remember how, when you wer a little tot, restless and horribly nervous after a hard day's play, she used to quiet and soothe you, and bring you safely across into "Sleep Land," merely by sitting beside your bed and scratching your hed or back of your little bare arm? And haven't you, yourself, checkt many an impending sneeze by pressing the upper lip tightly against the teeth with the fingers?

We know also from painful experience, that when we hav pain, unconsciously we grind and grit our teeth, and that if we bump our elbow against the door jam the first thing we do is to clasp that elbow fondly and lovingly, and caress it until it is in a condition of comparativ ease.

And no one needs to be reminded that when the unsympathetic dentist drives his chisel down—or up—seemingly to the very roots of the teeth he is scaling for us, or when he removes a tooth without first giving us an anes-

thetic, we help him to the fullest extent of our power by hanging on like grim deth to both arms of the dental chair.

All these, and dozens of other apparently useless things, performd automatically and unconsciously every day, ar matters of common knowledge and observation. We know that there must be some reason for doing them, otherwise they wouldn't be done so promptly and so universally. And yet, until a recent yesterday, no satisfactory scientific explanation was forthcoming to account for them. But now we know what these actions signify. We understand the principle that impels them. They ar done because they tend to relieve pain and overcome discomfort in the zones in which the original trouble is located.

Take, for example, the familiar action of tightly clenching the hands—sometimes digging the nails deeply into the palm—automatically resorted to under the stress of pain, fear, anger, or some other powerful emotion. This action has the effect of inhibiting, or stopping, the transmission of nerv impulses thru all the zones in the body, and does much to mitigate the severity with which we react to these impulses. This inhibition may, indeed, prevent even the bursting of a blood vessel, or some other grave response to the tremendous stimulus of pain or emotion.

So the clenching of the fists, the grinding of the teeth, the deth-like grasp on the arm of the dentist's chair, and all our other automatic contractions and pressures ar natural and logical, inasmuch as they tend to diminish the response to nerv stimuli.

These things we now know with comparativ certainty, for one of the most far-reaching advances in medical progress has made them clear to us. This is the discovery by William H. FitzGerald, M.D., a nose and throat surgeon in Hartford, Conn., and verified by George Starr White, M.D., F.S.Sc. Lond., of Los Angeles, California, and other eminent physicians.

This discovery was that the body is divided into ten longitudinal zones (five on either side of a line drawn up the middle), and that these zones hav their origin in the thum, first, second, third, and fourth fingers; run up the arm over the face and hed; and down the back and front of the body, ending in the toes corresponding to the fingers.

The experiments of Dr. FitzGerald, Dr. White, and physicians, surgeons, dentists, and osteopaths all over the country, who hav been following out the practis of Zone

Therapy, prove that, notwithstanding that Zone Therapy antagonizes present accepted teachings, there is, nevertheless, a distinct relation between, for instance, the first and second fingers and the thyroid gland (as in goiter); or between the palm of the hand and the small of the back (as in lumbago); or the gums back of the wisdom teeth and the ear (as in catarral defness). Exactly why this is so, we do not yet rightly know. But eminent medical men ar at work on the problem and we shal soon find out.

Pain, discomfort and most disease processes anywhere in these zones may be "attackt" by pressures on the roof or the floor of the mouth, the tung, within the nose, or on any bony eminences (as over the nuckles or toe joints) in the zone in which the trouble is located. And one of the most singular and significant things in connection with the discovery is developt from the fact that whatever, by this method, tends to relieve pain also tends to correct the cause of the pain—in so far as the process may be correctable.

Also, while the pain or the abnormal condition can be influenst by pressures in the zone involvd, the results ar usually more satisfactory when the pressures ar made in certain definit areas—usually those nearest the seat of the trouble.

It is the intention in the present article to provide the one who is "mothering" the family with a knowledge of some of the simpler procedures in Zone Therapy, so that he or she may be able to employ this effectiv and harmless means of relieving some of the common ailments one is constantly cald upon to "doctor."

Perhaps the complaint that calls most frequently for relief is *hedake*. Hedake and neuralgia can be corrected almost as often by Zone Therapy as by "hedake powders." And there is no danger of depressing the hart or of temporarily paralyzing the nervs of sensation,

If, then, one of the family should happen to hav hedake, carefully wash the hands and insert the first and second fingers in the "patient's" mouth. Then make strong pressure upon the roof of the mouth (the hard palate) as nearly as possible directly under the area where the pain is located. For instance, if the pain is low down in the forehed, strong pressure should be made immediately abov the roots of the front teeth. Good results also follow in this variety of hedake if strong pressure is made with the

thum and index finger at the "root" of the nose, pressing the fingers deeply into the eye pits for this purpose.

If the pain is in the top of the hed, the pressure should be focust in the center of the roof of the mouth; if over the temples or on the side of the hed, on the extreme side, corresponding with the area involvd. (If the victim of hed-ake wears false teeth, be certain to first remove the plate.)

The pressures should be very firm and stedy, shifting a little from time to time, so as to completely "cover" the zone corresponding to the seat of the pain; and should be maintaind for from three to five minutes *by the clock*. Do not *guess* at the length of time consumed in the "treatment," as it always seems much longer than it actually is.

Hedakes and neuralgias of nerv origin, and not caused by toxic absorption from the bowels or by other persistent organic causes, usually respond to these pressures within a few minutes.

If the patient should prefer to treat herself, she may do so, using the ball of the thum in the same manner for the purpose. But the results ar usually more satisfactory if the treatment is not self-administerd, as a more uniform degree of force can be exerted by some one else.

Frequently the pain wil be relievd by strong pressures made over the joints of the patient's fingers corresponding with the seat of the pain. Or the same results can be accomplisht by wearing for several minutes at a time (or until the finger tips become slightly discolord) broad rubber bands, or tightly-bound tapes. But the pressures on the roof of the mouth ar usually more effectiv because more "direct."

Whooping cof and common cof, asthma, hoarseness, and throat and bronchial irritations ar conditions frequently referd to the home "medicin cabinet" for attention. Yet one of the best of all medicins for these troubles is the broad handle of a tablespoon, used as a tung depressor. Properly and forcefully used, it has cured hundreds of severe cofs—cofs that hav resisted practically every other form of treatment. And it doesn't derange the stomac, spoil the appetite, nor stupefy a patient with narcotics—as do many of the "cof cures" in general use.

The pressure is usually made directly in the center of the tung, altho if the irritation is extensiv, force should be brot to bear on the extreme right and left sides of the tung as wel. If the irritation seems to procede from low down

in the bronchial tubes, the pressure should be made farther back on the tung, remembering always that the farther back it is focust, the lower down the impulse is felt. Three or four-minute "treatments," repeated at intervals of one-half hour or more, wil usually giv relief, altho I hav known many cronic and aggravated "dry cofs" to be cured by one application.

For hoarseness and huskiness, it might be wel to combine these actions with a modification of Zone Therapy devized by Umberto Sorrentino, the tenor, and used among his professional friends with great success. This consists in grasping the tung firmly in a handkerchief, pulling it forward as far as can be comfortably borne, and then slowly "wriggling" it from side to side for a few minutes. This, Sorrentino finds, eases up throat tension, "limbers" up the voice, and is also effectiv in helping abort a beginning "cold."

The old and wel-known treatment for hiccofs also falls logically within this same category, and is extraordinarily successful. Grasp the tung of the hiccoffer in a clean handkerchief and pul it forward, squeezing it firmly at the same time. It should be thus held while one is counting 100 slowly. This action "inhibits" the entire zone in which most hiccofs originate.

Smarting, burning pain in the eyes resulting from strain, styes, and inflammatory condition affecting the membrane of the eyes and lids, and granulated lids, ar relievd and frequently cured by pressure upon the joints of the first and second fingers of the hand corresponding to eye involvd. The fingers should be prest abov and below, alternating with a "side squeeze," in order completely to "cover" this zone; or the broad rubber bands or tightly bound tapes may be used if more convenient.

In styes the relief is frequently complete in four or five treatments. In other inflammatory eye conditions it may be necessary to repeat the treatment daily for several weeks. A bandage soakt with camfor water, bound around the index fingers, helps materially in relieving itching and congestion of the lids.

Toothake is another one of those visitations that sometimes make us sorry we wer ever born. Yet if an aking tooth is firmly graspt by the thum and index finger immediately over the roots, and the pressure is gradually increast as much as can comfortably be borne, and then held

firmly for four or five minutes, the result wil almost invariably (unless the pulp is exposed) be to completely relieve the ake. This relief may persist for several hours, until such time as the servis of a dentist can be obtaind.

Wry neck, lumbago, and muscular pain ar excedingly common and most distressing ailments. Some people ar very susceptible to them, the slightest draft, wetting, or exposure bringing on an attack. Zone therapeutists hav found that the best way to cure these troubles—and they hav cured them after days or even weeks of unsuccessful medication —is with a pair of steel or aluminum combs. Deep pressures made on the palms of the hands in the zones corresponding to the location of the pain, wil usually bring about relief within a few minutes. I hav repeatedly seen patients with lumbago, who could not even turn over in bed, who, after tightly clenching an aluminum comb in either hand for ten minutes, wer able to get up, dress themselvs, and "join the folks" down stairs.

It occasions no surpirse to see these results occasionally follow the application of a powerful electrode or a huge dose of dilute nitric acid. Yet we cannot really explain the action of electricity or of a drug or of homeopathy in relieving pain any more satisfactorily than we can explain the use of a pair of metal combs or some rubber bands.

For the relief of nervousness, especially that form of nervousness that manifests itself in "fidgety" irritability, insomnia and "high tension," a modification of grandmother's method of quieting the restless baby has been most efficacious by Zone therapeutics.

Hav the patient relax in bed or on a comfortable lounge. Then stroke the rists and forearms—always in an upward direction—with the teeth of the metal comb or with the back of a table nife, or, if the metal seems to irritate, use the tips of the fingers insted. This action, continued for from fifteen to thirty minutes, wil usually quiet the most restless, and is often more effectiv than a "sedativ."

Strange to say, this same stroking of the rists and forearms has a wonderfully soothing influence upon a sick stomac, altho with sea-sickness or car-sickness better results follow deep pressures with the teeth of the metal comb across the backs of the hands.

But it is in relieving the pains and disorders peculiar to women that Zone Therapy givs the most clear-cut results. Hundreds and hundreds of women, who hav had

to "giv up" and go to bed for a day or two each month, ar now, owing to their use of Zone Therapy, absolutely free from pain or irregularity.

For treating these conditions a serrated, ruf-surfaced tung depressor (procured at most drug stores) is best altho, if this is not available, the handle of a large spoon or the bone handle of a tooth brush may be used. This should be applied to the tung three-quarters of the way back and on the median line. The patient's hed should be held rigid, and the lower jaw supported, so that considerable force can be exerted. The pressure should be held firmly for two minutes. Then it should be relaxt, and the tung depressor moved slightly, so as to change the point of focus. Or the instrument may be turnd or rotated from side to side, at one-minute intervals, for five minutes.

It might be added that pressure or "banding" of the thum, first and second fingers of both hands helps materially in this condition. And one of the most comforting factors in the practis is that the patient is quite as wel the next morning as she is even directly after the most successful *drug* treatment.

Occasionally deep pressure with the metal comb on the back of the hand—"combing" thoroly the region of the thum, first and second fingers, as far as the rist—has given excellent results in pain and irregularities. But the tung pressures ar most uniformly successful.

Also, any method calculated to render labor less of an ordeal—particularly when the method cannot possibly do harm—is worthy of a trial. There is absolutely no danger to either mother or child in its employment, and no indication that it might even be responsible for a "blue baby"—as follows frequently with "twilight sleep." For in almost every case in which Zone Therapy has been tried, labor has been accelerated three hours or more, insted of retarded.

And, anyhow, it is merely an amplification—or rather a completion—of the things that hav always been done instinctivly by women. The clenching of the hands, the crushing grasp on the hands of the attendant, the pulling at the towel or sheet fastend to a footboard—all these things ar Nature's methods of bringing about relief from pain in labor. They ar inadequate, however, because the pressures ar not maintaind for a sufficient length of time, and because the means for making the pressure ar not sufficiently "sharp." In other words, Nature knows what should be

done, only she doesn't go far enuf with it. Zone Therapy merely amplifies Nature's efforts in this direction.

Therefore, when labor commences, the woman should be given a pair of metal combs, which may be clencht tightly in the hands so that the teeth "dig in" as hard as can comfortly be borne. Or a "hand clasp," consisting of two hevy wooden screws such as ar used in carpenters' vises, bound at the ends with elastic bands, may be fastend on. The soles of the feet may be prest against some ruf-edged surface—the corner of a box or a broad file hav been successfully used for the purpose.

Or else the combs or hand-clamps may be discarded and the "rope analgesics," devized by Dr. White, can be used. This device can be duplicated by taking two wooden handles (or package carriers), cutting into them deep grooves, and then running thin ropes thru them.

Strong traction made upon the soles of the feet by the woman herself givs relief from pain by inhibiting the nerv impulses, not only in all the zones of the foot, but also in the zones of the hands. For the rope wil cut into the palms of the hands quite effectivly during the efforts made to pul on the foot "analgesics."

Some of the results following the application of Zone Therapy in defness hav been positivly startling. Men who had never herd a fonograf or listend thru a telefone, hav recoverd a fair degree of hearing; and one woman who never knew what her husband's voice sounded like, she having been def for many years before her marriage, is now able to carry on a conversation with him.

A young soprano, who was progressivly losing her hearing so that it was no longer possible for her to "sing in the pitch" or harmonize with the other members of the choir, after a few weeks of treatment completely recoverd her hearing and was able to accept an engagement with a concert company—a much more remunerativ position than the one she had been forst to resign.

Her treatment consisted in "tucking" a wad of surgeon's gauze (a solid rubber eraser givs even better results) in the space back of the wisdom tooth—between the last tooth and the angle of the jaw—and having her bite forcibly upon this, repeating the procedure several times daily. In addition to this she "workt" with a metal comb upon the joints of the third (ring) finger.

If Zone Therapy wer universally known and practist, it is quite likely that there would never need be another operation made for goiter nor another dose of thyroid extract given for the relief of the disease. For the results of properly applied Zone Therapy ar almost uniformly successful.

Upwards of 300 cases of goiter hav now been reported to me as cured by Zone Therapy. The tape mesure shows that in some of these patients the swelling decreast three inches in as many weeks. One very responsiv case was reduced from 14½ inches to 13 inches in three days.

Almost from the first treatment the feeling of suffocation, the distressing nervous symptoms, and the rapid puls rate ar favorably influenst, and in from two to eight months the "pop eye" and the swollen gland ar progressivly reduced to normal.

In treating goiter, a thin, blunt-tipt probe is past thru one of the nostrils to the back wall of the farynx. Pressure is made low down on this wall (a little practis wil determin the exact "spot" to probe) until a definit sensation is felt in the region of the goiter. Sometimes this is "metallic," or it may be a sensation of cold, or tickling, or else a mild pain. This pressure is held for several minutes, repeated three or four times daily.

In addition to the treatment on the throat wall, pressures may be made upon the joints of the thum, first and second fingers. Or, if the goiter is a very broad one, and extends over into the fourth zone, the ring finger must be employd.

A moderately tight rubber band, worn upon these fingers for ten or fifteen minutes, three or four times daily, wil also help. The treatment must be persistent. It must be the intent to keep the goiter zone "quieted" never allowing it, except during sleep, to come completely out of the influence of the pressure.

And be certain that the teeth ar put in perfect condition before attempting to drive a goiter off the premises. For any irritation or inflammatory process kept up by the teeth prevents the proper restoring of function by Zone Therapy.

The absurd and utterly impossible thing of today is the accepted truth of tomorrow. On its face, Zone Therapy seems ridiculous. But next month or next year perhaps the most ridiculous thing about Zone Therapy may be that we ever doubted it.

GENERAL CONSIDERATIONS IN THE EMPLOYMENT OF ZONE THERAPY

Altho what has alredy been said in this Part Six regarding Zone Therapy should be sufficient for almost anyone to employ it, yet to more completely round out the discussion of the subject, I might ad the following:

Do not think that Zone Therapy is going to cure everything. It wil not.

Do not think it is going to stop all pain, for it wil not. But the very fact that no remedy on erth wil suit *all* conditions, makes Zone Therapy no exception.

That Zone Therapy is a great adjunct to every physician's equipment, goes without saying.

That Zone Therapy is a boon to all humanity cannot be questiond. Any method that is simple and can do no harm while at the same time it is effectual in more than 60% of the cases, is a good method. Its very simplicity and easy applicability ar the only reasons why some selfish people belonging to the medical profession hav tried to thwart it.

Study the diagram of zones wel and be sure that you hav that wel fixt in your mind. Know what Zone 1, means and what Zone 2, means, etc.

Pain in any zone can be treated in any part of that zone but preferably in the fingers, toes, mouth, etc.

Altho "attack" can be given thru many locations other than those cited, or illustrated, they ar not practical and it would be worse than useless to mention them here.

Read over the following clinical cases carefully and you wil gain very much information regarding tecnic therefrom. Of course personal instruction of an hour or two in Zone Therapy (if the instructor thoroly understands the work) simplifies the matter very much, but with the illustrations and information previously given personal instruction is not essential.

I hav added a detaild Zone Therapeutic guide by Dr. FitzGerald in this Part Six. If you wil carefully read thru the lectures on Diseases and Their Treatment you will find Zone Therapy very often mentiond.

In closing this lecture, I should like to ad part of the closing chapter in Dr. FitzGerald's and Dr. Bower's book entitled "Zone Therapy.*"

"The Japs in their uncanny knowledge of nerv anatomy, exemplified in their proficiency in ju-jutsu hav shown that by pressure upon certain nerv terminals or upon plexuses of certain nerv groups they ar able to do almost everything except murder a victim. Perhaps they could do this also if they wer sufficiently industrious and persevering.

"Indeed, for many years they hav been aware that there ar certain nerv centers in the neck and under the angle of the jaw, pressure upon which wil temporarily suspend consciousness. In fact, their methods wer tried by surgeons, prior to the discovery of anesthesia; but wer discarded, owing to the fact that no one could garantee that the patients would wake again after the operation.

"Also, as showing how great oaks from little acorns grow, and how mickle and mickle make muckle, Professor William Halstead, more than a dozen years ago, was operating upon a man with a rupture—under cocain anesthesia, as he thot. It was found, however, after the operation had been *painlessly* completed, that the 'moon-stricken' assistant had forgotten to put the cocain tablet in the syringe. So that all the anesthetic the patient got was steril water. However, this was enuf, for the pressure of the water injected into the parts, had blockt the nerv tract, and inhibited the transmission of the message of pain.

"This experience may or may not hav given Dr. Crile the clue to his interesting and vastly important discovery of "nerv block," but, in any event, we lernd something new about the human body. But—and this is the point I wish to emfasize—we ar not thru lerning about it yet.

"So, if some time a doctor tels you that a woman of sixty-nine, suffering for years from one-sided paralysis, made pressures twice daily with an aluminum comb on the top (or front) of the hand, favoring the thum side—and in two weeks notist a decided improvement, and after five months

*Publisht by I. W. Long, Columbus, Ohio. Second edition now out.

can now lift her foot free from the floor and walk without a cane, don't sneer.

"If another tels you that a case of infantile paralysis of five years' standing—after several months' treatment with a probe on the back wall of the farynx—can now kick as high as his shoulder with either foot, don't scof. For that doctor has fotos of the boy showing him in the act of doing just this identical thing.

"It may also be that catarral appendicitis is helpt. For in unorthodox ways three cases of catarral appendicitis wer apparently cured by pressures exerted with a comb over the first, second and third fingers, and carried up as far as the rist. These cases wer diagnosed as catarral appendicitis by several competent medical men. They showd all the 'classical symptoms,' including pain on pressure over McBurney's point, vomiting, and digestiv disturbances. They wer treated three times daily for several days, and in the interim, treated themselves at home along the same lines. In ten days to two weeks, there was an apparent cure of all three cases. And now, after six months, there has been no return of the condition.

"And, speaking of appendicitis, it is interesting to note that if pain is relievd by zone pressure, and returns after a short time, we can be morally certain that there is pus present, and that the case demands immediate operation. This same thing, as we before observd, applies to abscesses in the ear, teeth, tonsil, or anywhere else.

"The injunction to 'prove all things and hold fast to that which is true,' is as applicable and pertinent today as it was when first dropt from the lips of the old sage. So, if some time your progressiv doctor should tel you to rub your finger nails together, and scatch the front of your hands and arms, and thereby cure falling hair, don't laf—because he may be repeating to you only what numbers of his patients hav told him they did and stopt their hair from leaving its moorings.

"Also, if he tels you to use a wire brush on the front and back of the hand, and also press with the aluminum comb on the palms of the hand to cure cold feet, he may not be nearly as crazy as he sounds. He may be merely a little ahed of your time, as wer Harvey, Semmelweis, Horace Wells, Lister, and hundreds of others who hav sufferd the slings and arrows of ridicule.

"And so, we who believe in Zone Therapy now understand why we grind our teeth. It is because the action relieves nerv tension, and diminishes the pain in all the zones of the body connected by those invisible and as yet undiscoverd nervous wires strung thru the telegraf poles of the teeth.

"When we grab our bruisd shins we check the transmission of pain in the irritated nerv-trunk lines of that zone. When we grasp the arm of the dental chair, and hang on like grim deth, we ar unconsciously going thru motions that, if continued long enuf, would hav made our trial comparativly painless. The only fault in our preparation for the ordeal was that we should hav started our pressure-grip three or four minutes erlier. But our intentions wer good.

"When automatically we clench our fists in furious anger, we ar relieving our terrific nervous excitation, and thereby perhaps preventing the bursting of a blood vessel. When we clasp the hands of one sorely stricken and in the throes of despair, we ar, in addition to supplying him with comforting magnetism and fysical solace, producing a distinctly analgesic and quieting effect upon his entire nervous system.

"And when we clasp our hands or press the fingers tightly together in supplication, we ar ministering to overwrot nervs, and thereby perhaps bringing ourselvs into closer harmony with the Great Cosmic Force that envelops us all in a mantle of kindness and love."

ZONE THERAPY ILLUSTRATED

Fig. 311 shows the anterior zones of the body.

Fig. 312 shows the posterior zones of the body.

Fig. 313 shows the dividing line for the anterior and posterior zones.

Fig. 314 illustrates how the fingers of each hand can be used to depict the zones of the front of the body.

Fig. 315 illustrates how the fingers of each hand can be used to depict the zones of the posterior part of the body.

This scheme sometimes helps to forcibly impress upon the beginner just how the ten zones in the body ar markt off.

Fig. 316 illustrates some non-electrical applicators useful in Zone Therapy. To these should be added rubber bands about ⅛-inch wide and 2 inches long, and also ordinary spring clothespins.

Fig. 317 shows some non-electrical devices useful in Zone Therapy which hav been recently developt by Dr. FitzGerald.

Fig. 318 shows how the FitzGerald "Therapy Bite" can be used behind the last molar teeth.

Fig. 319 shows how the same can be used between the front teeth. These illustrations wil giv an idea how this "Therapy Bite" can be used. Other material can be used to bite on, but this is a very handy little instrument.

Fig. 320 shows how some patients can trace the analgesic effect of pressure. This illustration is from actual fotografs markt to show how this patient traced pressure at the mucocutaneous margin in the left nostril. The regular metal probe was used for this purpose.

Fig. 321 to Fig. 347 inclusiv show some non-electrical methods as wel as tecnic for applying Zone Therapy.

Fig. 348 shows the "Therapy Zone." This no doubt is one of the best non-electrical devices for using on the fingers. This "Therapy Zone" can also be used electrically, as shown in Fig. 368.

Fig. 349 shows the "Therapy Zone" in use.

Fig. 350 shows a rubber band twisted around the finger three times and in the right position.

Fig. 351 shows an ordinary, wooden, spring clothespin in use. Notis that the "Therapy Zone" is rold down to the proximal joint of the finger, and also the rubber band. The spring clothespin is used over the end of the finger. These three devices attack both the anterior and the posterior zones simultaneously.

Fig. 352 shows the regular, flat applicator bent up at one end, but with the strait end serrated so that lintine or other soft cotton material can be held on the end without slipping off. Not only is this applicator very valuable for treating the posterior pillars of the fauces by the hook end, but it can be used for making pressure along the floor of the nose by means of lintine dipt in any kind of medicament that is indicated. This is an entirely new departure in Zone Therapy and is meeting with great success. Some use a weak solution of camfor on this lintine while others use witch-hazel, oil of eucalyptus, oil of eucalyptus and oil of thuja mixt, etc. One is not only getting pressure upon the first and second zones anteriorly and posteriorly, but is getting the effect of the medicament in that locality.

This same applicator can be used for stopping *nose-bleed* by passing the dry lintine way back to the posterior wall of the nasofarynx. The blood wil cause the lintine to swel and the pressure wil cause the bleeding to stop. I find this method far better than using the nasal plugs that ar drawn thru by cords or the rubber devices that ar inflated.

Fig. 353 shows a folding pocket tung depressor that can be used in lieu of a tablespoon in making pressure upon the tung for treating stomac, intestinal, or uterin complaints. Pressures should be made far back on the tung and very firmly. Many ladies carry such a tung depressor in their bag all the time so if they ar ever taken with "cramps" they can relieve themselvs almost immediately. I make it a practis to hav a quantity of these in my offis to giv patients for home treatments to supplement the offis treatment.

Fig. 354 shows my specially constructed tung-pressor-electrode. This can be used non-electrically as wel as electrically. It is one of the best devices for offis treatment that we hav, as pressures can be made far back on the tung. For dysmenorrea, menorragia, amenorrea, metrorragia, nausea,

intestinal pains, etc., there is nothing to compare with it. Many of the most brilliant results achievd in Zone Therapy hav been obtaind by means of these tung-pressors.

The *tecnic* for using the *tung-pressure* is to intermittently pul hard on the tung, making the intermissions four times the respiration. One wil obtain better results by far in this intermittent pulling than they wil by the stedy pul.

Do not use this tung-pressing or pulling on a pregnant woman.

Fig. 355 shows my palate-pressor-electrode. This can be used non-electrically as wel as electrically for "attacking" the hard palate. This instrument has no equal for its special field. Pressures can be made close to the teeth or far back by the uvula.

For treating hedakes of all kinds, make pressure against the hard palate as nearly under the painful area as possible. By turning this applicator one way or the other, pressures can be regulated to suit the operator.

This same palate-pressor can be used for "attacking" the sublingual areas. By making pressures under the tung proper or on the floor of the mouth one can achieve most marvelous results.

Some cases of nausea ar relievd by making pressures on the floor of the mouth better than by pulling on the tung.

Many cofs, bronchial, asthmatic, or neurotic conditions ar relievd by making pressures on the floor of the mouth.

Fig. 356 shows how an ordinary aluminum comb can be home-made into a comb-electrode. Take a piece of wood, saw out a place in the center just wide enuf to fit the comb and slip it down into it. The electrical attachment at the end can be had from electrical supply dealers, and is very easily applied. These combs can be used non-electrically as wel as electrically. For using combs for Zone Therapy, it is best to use them over the ends of the fingers (Figs. 340, 357) for treating both anterior and posterior zones, and over the proximal joint of the fingers for treating the anterior or posterior zones singly (Figs. 343, 344).

Fig. 357 shows how the comb placed in the block can be used for treating the ends of the thum and four fingers simultaneously. This can be done both electrically and non-electrically. This is the method for treating the ends of the fingers as it attacks both the anterior and posterior zones together.

Fig. 358 shows a home-made device for holding two combs at one time. This is a very valuable device for treating electrically as wel as non-electrically. These combs can be bot at almost any general store, and these blocks can be home-made or made by any good wood worker.

Fig. 359 shows this double-comb-electrode or applicator in use. Notis what a powerful influence these opposing teeth must hav upon a firmly chencht fist. This applicator is one of the best instruments to use for overwrot nervs while a person is angry or under tremendous excitement. If he presses hard enuf, he forgets all about his other troubles and soon relaxes. Used electrically, this double-comb contrivance produces very "stirring results."

Fig. 360 shows a stock comb-electrode which many of the electrical houses carry. If they do not carry one like this, they carry one similar.

Fig. 361 shows a hair-brush-electrode which can either be used electrically or non-electrically.

The *tecnic* for using wire combs or brushes on the body for Zone Therapy is to comb the body from the extremity toward the center—*never* in the opposit direction.

Insomnia is often not only relievd but cured by this method.

Stroking the arms from the hands up toward the shoulders, and the legs and thighs from the toes upward, works wonderful results in many cases of neurasthenia. When these comb or brush-electrodes ar used along with electricity, the results ar greatly enhanst.

When using this device, my plan is to treat once a day in the offis with electrodes and hav the patient use similar treatments without electricity every two, three, or four hours, as the case may be, in their own home.

Fig. 362 shows the Valens-Disc-Zone Analgesics applied to the hand with two rubber bands. It wil be notist that the edges of these discs ar sharp. They ar turnd out of hard, specially prepared wood. Metal wil not do as it abrades the skin.

It wil be notist that the rubber bands wil make lateral pressure on the hand and the discs press firmly into the skin both anteriorly and posteriorly. These same Disc-Zone-Analgesics can be used on the feet to great advantage. Their use on the feet is shown in Fig. 364.

For reumatism, neuralgia, lumbago, muscle pains in the legs, etc., they should be used on the feet. The effect

is enhanst by having the patient stand on them while they ar *in situ.*

For pains in the shoulders, arms, and hands, if they ar placed over the hands as shown in the illustration, they many times wil "work miracles."

I know of many cases of lumbago that hav been cured entirely by these Disc-Zone-Analgesics after the patient had tried every other known fysical method for relief, but in vain.

Fig. 363 shows the Valens-Disc-Zone-Analgesic with rope attachment. These discs ar made larger than those that ar used with the rubber bands. This device has now become so universally used that in some sections one out of every three families hav some of them in their house. Any up-to-date physician who is using Zone Therapy can certainly not be doing all that is possible in that line unless he uses some such device. They ar "simplicity personified." (Home-made arrangements can be made to do about the same as can be done by these specially made ones.)

Fig. 364 shows the Valens-Disc-Zone-Analgesics and the Valens-Rope-Disc-Zone-Analgesics in use for childbirth. This method for "painless labor" works in so many cases that it is not right for any obstetrician to omit it. Of course it wil not work as wel in some cases as in others, but we hav so many reports of "painless childbirth" by carrying out this tecnic, as illustrated, that it has a place high up in modern obstetrical practis. The method cannot injure the mother and certainly wil not injure the child. The fact that the pain is so greatly lessend, or relievd entirely, makes the birth more rapid, and the effects on the child cannot be understood until one has seen the operation. The child seems to be "a day old" in appearance within two or three minutes after it is born. No doubt the reason for this is the relaxation and consequent ease with which the child is deliverd and consequently has no set back in its normal activities.

The pulling aids in the mecanics of labor while the Zone pressures on the inside of the hands works miracles. The pressures on the feet over white stockings cannot injure the skin and hav an effect upon the relieving of backake during labor that is truly marvelous.

Fig. 365 represents Valens-Twin-Disc-Zone-Analgesics. These ar made the same as the single ones with the exception that the rope passes thru two different ones, so pres-

sure in the hands can be had with one, and on the bottom of the feet with the other. These ar very valuable in treating reumatism, neuritis, lumbago, coccyalgia, and all muscular pains, especially below the lumbar region, altho they hav an effect thru the entire body owing to the pressure on the hands. They especially effect the posterior part of the body.

Fig. 366 shows Valens-Triplet-Disc-Zone-Analgesics. The manner of using them is shown in Fig. 367. These ar made similar to the Twin-Disc-Zone-Analgesics with the exception of having a movable set of discs to giv pressure upon the top of the feet in addition to those at the bottom of the feet. This Triplet set of Disc-Zone-Analgesics influences both the anterior and posterior part of the body, having special effect upon all regions below the lumbar vertebrae, altho they hav an effect upon the entire body. Cases of lumbago hav been entirely relievd by using these appliances.

Also bladder conditions such as enuresis caused by enlarged prostate or irritable neck of the bladder and all nervous conditions affecting the bladder can often be relievd or cured by this simple method.

For women it has a special effect upon the pelvic organs, and many cases of painful periods as wel as neuralgic conditions thru the ovaries, tubes and uterus hav been entirely relievd by these pressure outfits, and the *triplet set* ranks first because of its wide range of application.

Fig. 368 shows the FitzGerald Therapy Zones used electrically. The illustration hardly needs any explanation, but I might say that the little connectors that hold the wires together ar very convenient, and every physician doing this work electrically should hav a half dozen or more of these or similar ones on hand.

Using these Therapy Zones electrically has a far more profound effect than pressures without any electricity with them. The intermitted rapid-sine-wave current or the Pulsoidal Current is the one to use for this purpose.

Fig. 369 shows my special Unipolar Post-Nasal Electrode. This is made of especially insulated wire with only the tip bare. This is placed thru the nose, keeping close to the floor of the nose back of the posterior wall of the nasofarynx. The correct location of "attack" is found by asking the patient to put their finger upon the throat or just where they feel the probe. By moving the probe about

slightly, the location wil be interpreted over the chest, sides of the throat, back of the ear, and at times down as far as the pubes.

For the treatment of *goiter* this post-nasal electrode probe has no equal. The *tecnic* for this is to move the tip of the probe against the posterior wall of the farynx until the patient feels the reflex thru it over the largest part of the goiter. Then giv the treatment in that location. If it is a bilateral goiter, do the same on the other side.

I advize the patients to treat themselvs with the probe shown in Fig. 316c every three hours at home, and once a day I treat them with the Pulsoidal Current thru the post nasal electrode at the offis.

It is wel to supplement these by the neck-bending exercizes given for goiter, as wel as stimulation of the 6th and 7th cervical vertebrae.

When treating goiter, the indifferent electrode should be placed over the 6th and 7th cervical vertebrae because in that manner you ar not only treating thru the sympathetic system, but you ar giving Zone treatment at the same time.

Fig. 370 shows my Bi-Polar Post Nasal Electrode. This is used the same as the unipolar only both poles attack the posterior wall of the nasofarynx at the same time. One must be skild in inserting the unipolar before trying the bi-polar, and a very weak current should be employd.

Fig. 258 shows my Unipolar Post Nasal Electrode in use. Notis that the patient is holding the metal electrodes, one in each hand attacht to a bifurcated cord. Insted of holding the electrodes, one can be placed over the spine at the indicated area (which for goiter would be the 6th and 7th cervical).

Fig. 259 shows the Pulsoidal Current being used thru my Tung-Pressor-Electrode and the indifferent over the 2d and 3d cervical vertebrae. This treatment is very beneficial for treating conditions of the stomac and alimentary tract, as wel as pelvic conditions. Some cases of neuroses can be entirely cured by this method.

Fig. 371 shows how electricity can be carried thru a glass of water and used Zone Therapeutically. The caption under the illustration describes it very wel. This is a very unique method of using electricity in Zone Therapy, and it is quite effectual.

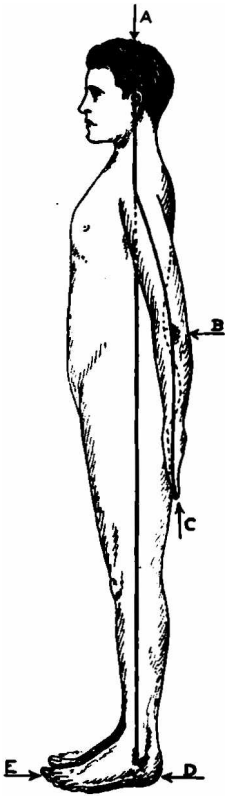


Fig. 313. Showing the division between the anterior and posterior part of the body.

Fig. 314

Fig. 315

Figs. 314 and 315. Showing how the hands can be used to illustrate the five zones on each side of the median line of the body.

Notis that the palms of the hands ar necessarily shown wrongly here and likewise the "backs" of the hands. Remember that the palms of the hands and soles of the feet ar in the posterior zone and the top of the hands and feet ar in the anterior zone.

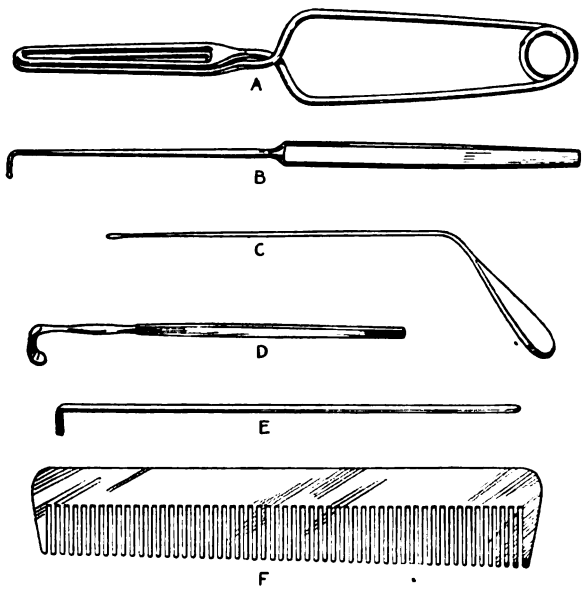


Fig. 316. *Non-Electrical Applicators Useful in Zone Therapy.*

A is an ordinary surgical clamp which can be used for clamping the tung.

B is an ordinary eye-muscle retractor. This can be used for intermittently retracting the posterior pillars of the fauces.

C is a special type of nasal probe used for attacking the posterior wall of the nasofarynx.

D is a regular palpebral retractor which can be used for intermittently retracting the soft palate, especially in the region of the fossa of Rosenmuller.

E is a regular flat applicator bent up at one end. This is useful about the throat and fauces. It can be used as a pressure applicator for the posterior wall of the orofarynx.

F is an ordinary aluminum comb used for attacking the fingers or toes either at the tips or about the joints.

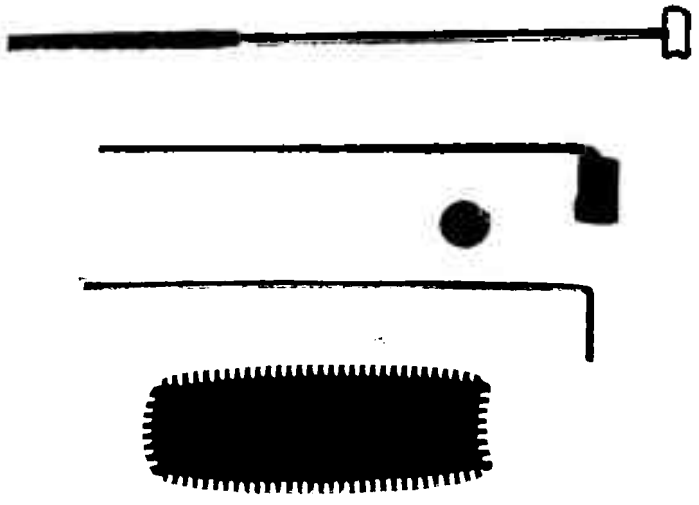


Fig. 317. Showing a Pillar and Palate Retractor, a combination Nasal Probe and "Therapy Bite" and the "Therapy Grip" (Fitzgerald).

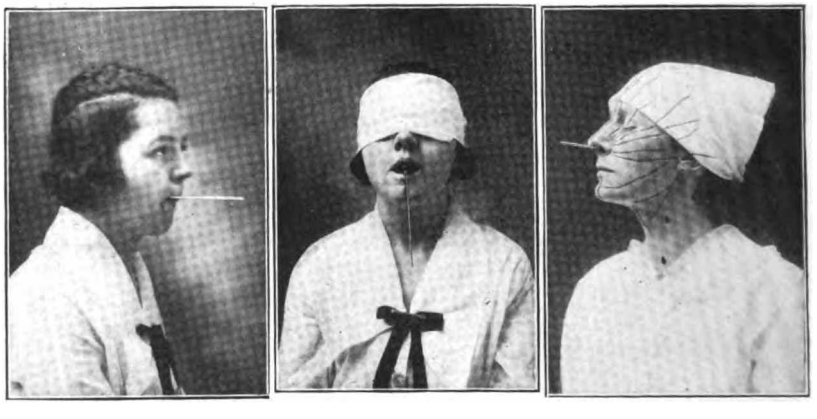


Fig. 318 Fig. 319 Fig. 320

Fig. 318. Showing how the "Therapy Bite" can be used behind the last molar teeth.

Fig. 319. Showing how the "Therapy Bite" can be used between front teeth.

Fig. 320. The lines depicted in profile abov represent streaks of analgesia (and sometimes anesthesia) produced thru pressure at muco-cutaneous margin in left nostril. Patients who trace accurately tel us that sensations occasiond by pressure in the nostril start wel behind the surface and gradually work forward to the surface. This applies practically to all orifises in the body including nipples and umbilicus.

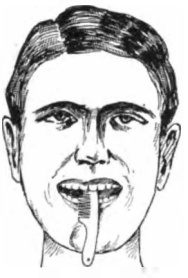


Fig. 321

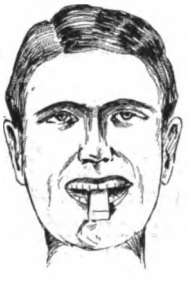


Fig. 322

Fig. 323

Fig. 321 shows the "zone bite," using a metal comb to bite on. This attacks particularly the first and second zone on both sides of the body. When biting on the side teeth, it influences the zones on the anterior surface of the body on the side the biting is done. This is especially useful in relieving stomac and abdominal pains and many kinds of cofs.

Fig. 322 shows the "zone bite" on a rubber eraser. This is not as effectual as biting on metal.

Fig. 323 shows the stretching of the tragus. This maneuver is used for treating pain in the ear and many kinds of hedakes where they ar located on the side of the hed. Also for many cases of tic-douloureux where the origin of the pain is in the facial nerv. This manuever is also very valuable in catar of the Eustachian tube.

Fig. 324

Fig. 325

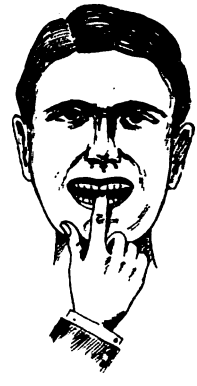


Fig. 326

Fig. 324 shows the "zone bite," using the under lip to bite on. This maneuver is very useful in treating pains along the anterior middle zones of the body. Many cofs can be cured in this manner.

Fig. 325 shows the "zone bite," using the tung to bite on. This is very effectual in pains thru the viscera, for constipation, dysmenorrea, etc. This maneuver is also of great benefit in many cases of catar and afonia.

Fig. 326 shows the "zone bite" used on the index finger of the right hand. This maneuver can be carried out on any one or more of the fingers, and in so doing is attacking the zone indicated by the respectiv finger or fingers. This is a very effectual mesure because you not only get the effect of the bite thru the teeth but on the finger as wel.

Fig. 327

Fig. 328

Fig. 329

Fig. 327 shows a "zone-stretching" maneuver on one side of the mouth. This maneuver has a very decided effect upon various pains in the side of the face and neck as wel as pains in any anterior zone on that side of the body.

Fig. 328 shows the zone-stretching maneuver on both sides of the mouth. This has a very beneficial effect in many cases of cof and throat irritation.

Fig. 329 shows a zone-stretching maneuver carried out by pressing the finger against the inside of the cheek. This is very beneficial in many cases of tic-douloureux, pains in the jaw, neck, and anterior zones of the body on the side that is attackt in this manner.

Fig. 330

Fig. 331

Fig. 332

Fig. 330 shows Zone pressure against the upper lip just under the nose. This can be done with the finger or with some applicator. This is very beneficial in aborting a sneeze or for cold in the hed, especially rinitis. Also for epistaxis and many other conditions when one wishes to attack the central zones anteriorly.

Fig. 331 shows a Zone-pinching maneuver. In this particular case it is the pinching of the bridge of the nose. This is very useful in cases of rinitis, cold in the hed, pains in the frontal sinus, blefarospasm, neuritis, etc.

Fig. 332 shows a Zone-dilating maneuver, using the finger and thum of each hand in dilating and pulling on the alae nasi. This is a very important maneuver in treating rinitis and many neurotic conditions affecting the nose, especially hay fever.

Fig. 333

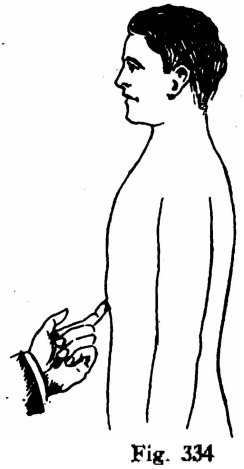


Fig. 334

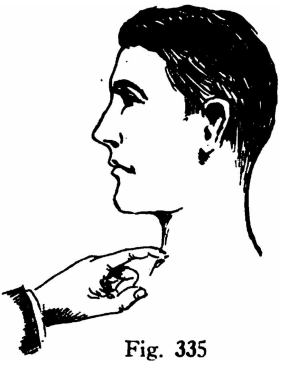


Fig. 335

Fig. 333 shows a "Zone-hook pressure," hooking the finger and making the pressure under the inferior maxilla. This is useful in treating the buccal glands. Also for pains in the throat, weak voice, afonia, etc.

Fig. 334 shows the Zone-hook pressure, attacking the inferior part of the sternum. This is a very valuable maneuver in treating cases of persistent hiccof, as wel as some cases of asthma. It can also be used for treating some stomac conditions.

Fig. 335 shows the Zone-hook pressure against the upper end of the sternum. This is very beneficial in treating goiter, cofs, pains in the throat, some cases of asthma, etc.

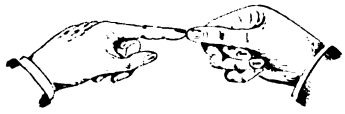


Fig. 336

Fig. 337

Fig. 336 shows a method of using the nail of the thum of one hand for attacking the ends of the thum or any of the fingers of the other hand. In attacking the end of the finger in this manner, one is attacking the anterior and posterior part of that zone.

Fig. 337 shows a Zone-pinching maneuver, using the thum and index finger of one hand to pinch the thum or any of the fingers of the other hand. This maneuver attacks both the anterior and posterior parts of the respectiv zones.

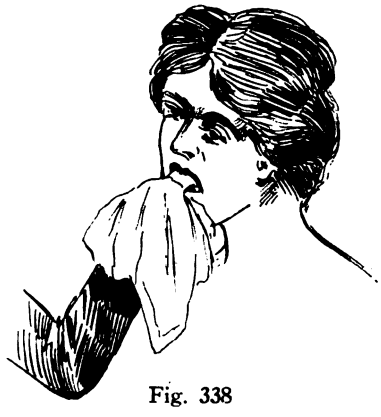


Fig. 338

Fig. 338 shows a tung-pulling maneuver for attacking the central zones. This maneuver wil stop many cofs and asthmatic attacks, as wel as dysmenorrea, pains in the abdomen, stomac, and chest. It is also very beneficial in amenorrea as wel as menorragia and metrorragia. For developing the voice this is also very beneficial. Many times a singer is greatly benefited by this maneuver. Twisting the tung from one side of the mouth to the other, making pressure on the teeth is also of benefit in clearing the voice, relieving functional disturbances in the throat and chest.

Fig. 339

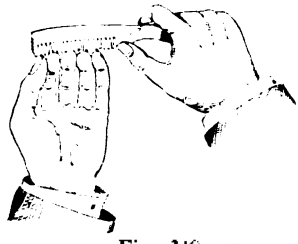


Fig. 340

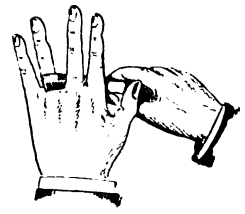


Fig. 341

Fig. 339 shows a method of grasping a comb, the end of which is notcht so as to hav the attack come on the thum. This attacks all the posterior zones on the side of the body indicated by the hand doing the pressing.

Fig. 340 shows a method of attacking the ends of each finger and the thum with the comb.

Fig. 341 shows how to use the teeth of the comb in attacking the webs between the fingers. The comb can be rotated from one side to the other, thereby attacking parts of all zones.

Fig. 342

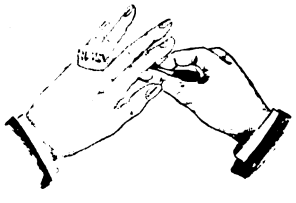


Fig. 343

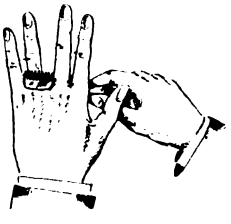


Fig. 344

Fig. 342 shows how to exert pressure upon the webs of the fingers of one hand by the finger of the other.

Fig. 343 shows how to use the back of a comb to exert pressure on the webs of the fingers and at the same time make pressure with the teeth of the comb on the opposit finger.

Fig. 344 shows how to use the back of a comb in making strait down pressure upon the web of the fingers.

Fig. 345

Fig. 346

Fig. 347

Fig. 345 shows how to make pressure by means of a relaxt clasp. This makes pressures on the webs between the fingers of each hand and is very valuable in treating nervous conditions and pains in the arms.

Fig. 346 shows a clasping maneuver for relieving pains thruout the body and especially for overcoming grief and other nervous states.

Fig. 347 shows a Zone-pinching maneuver, using the forefinger and thum of one hand to pinch the webs between the fingers on the other hand. This is a very valuable maneuver for attacking any desird zone.

Fig. 348

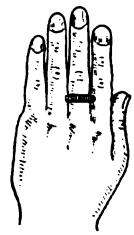


Fig. 349

Fig. 350

Fig. 351

Fig. 348 consists of a "pure rubber" ring around which is wound fine steel spring wire.

Fig 349. Therapy Zone in use.

Fig. 350. Rubber band in use.

Fig. 351. Spring clothespin in use.

Fig. 352. This shows a flat applicator with teeth filed in the strait end, so lintine can be held on without slipping and used for stopping *nose-bleed* as well as for Zone Therapy pressure in the nasal passages. The lintine can be medicated to suit conditions.

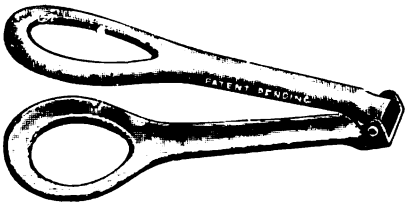


Fig. 353. Folding pocket tung depressor. This I hav patients carry with them to use when required for "home treatments.'

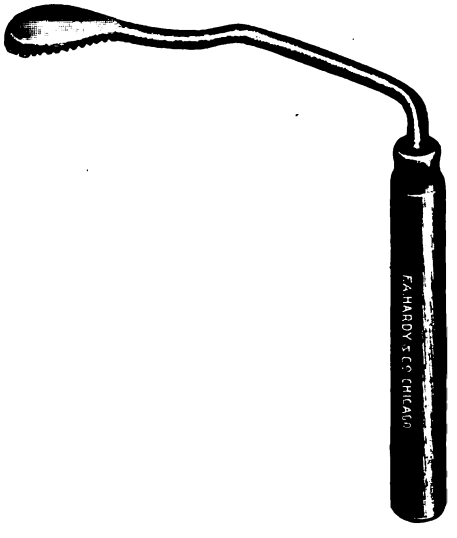


Fig. 354. Dr. White's Tung-Pressor Electrode. This can be used with or without electricity. Notis the "hump" to allow it to pass over the teeth and not hit them.

Fig. 355. Dr. White's Palate-Pressor Electrode. This can be used with or without electricity. Can be employd on hard palate or under tung. Turnd with the bend from you, it is used at posterior part of the hard palate. Turnd with the bend toward you, it is used close to the upper teeth on hard palate.

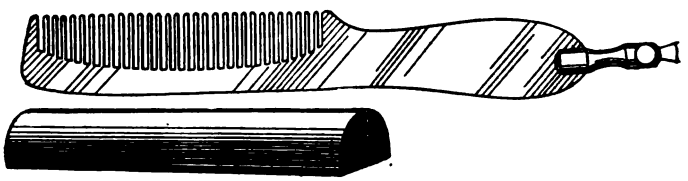


Fig. 356. Showing how an aluminum comb can be put into a block of wood and used electrically, or non-electrically.

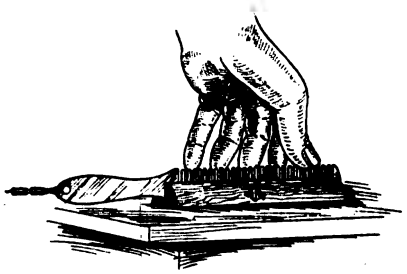


Fig. 357. Showing method of attacking the tips of thum and fingers electrically or non-electrically.

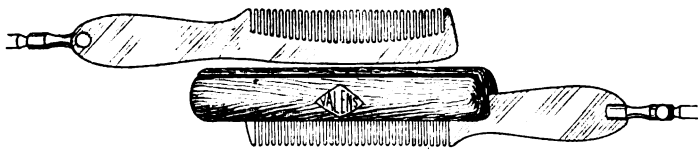


Fig. 358. Showing how to make a block to hold two combs at one time.

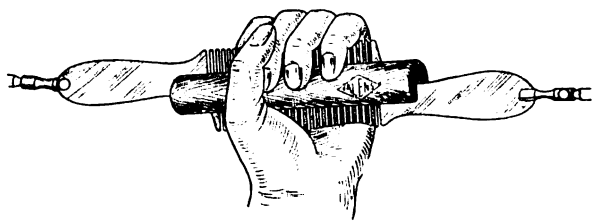


Fig. 359. Showing how to use two combs simultaneously with or without electricity.

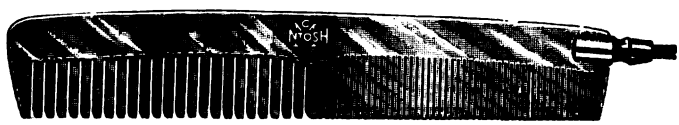


Fig. 360. Comb Electrode without handle. This comb can be fitted into block of wood as shown in Fig. 357, or it can be used with universal handle and no block.

Fig. 361. Sanitary Hair Brush Electrode. This can be used with or without electricity on any part of the body.

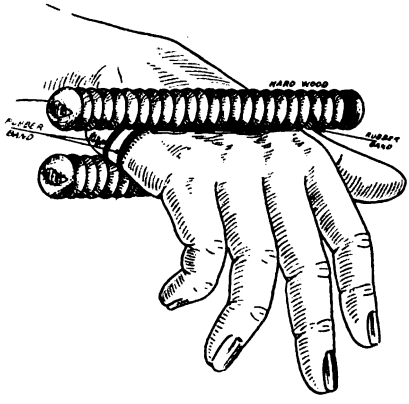


Fig. 362. Valens Disc-Zone-Analgesics used in pairs. The rubber bands ar so placed as to giv lateral pressure.
They can be used on the feet as shown in Fig. 364.

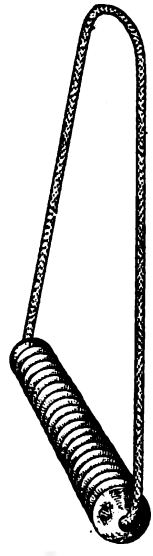


Fig. 363. Valens Disc-Zone-Analgesic with rope attachment.
An extension rope can be used on these applicators and attacht to the foot of the bed so a patient, during confinement, can grasp one applicator in each hand and make traction.
Fig. 364 shows this Disc-Analgesic in use for confinement.

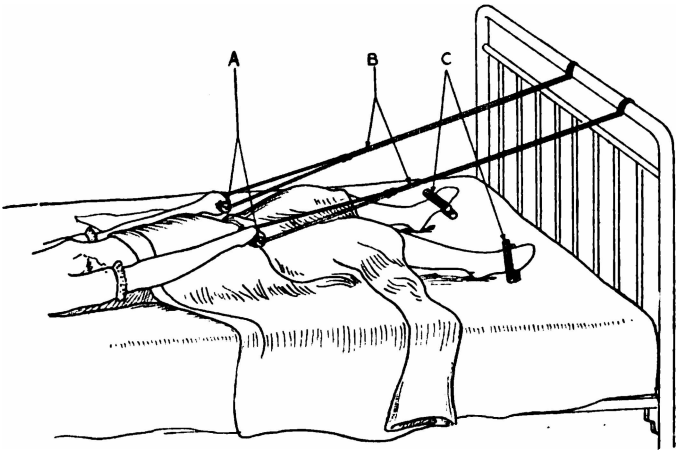


Fig. 364. Valens Rope-Disc-Zone-Analgesic *A*, with extension ropes *B*, attacht to foot of bedsted. *C*, represents two pairs Disc Analgesics on the feet. Notis that the lady has white stockings on. This Figure represents the use of Disc Analgesics for "Painless" childbirth.

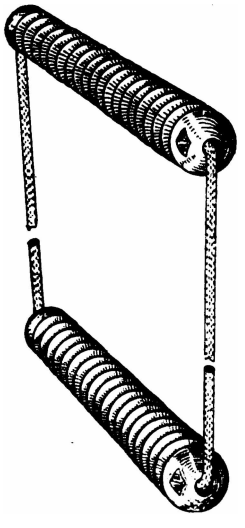


Fig. 365. Valens Twin-Disc-Zone-Analgesics. They ar used under foot and in hand in same manner as shown in Fig. 367.

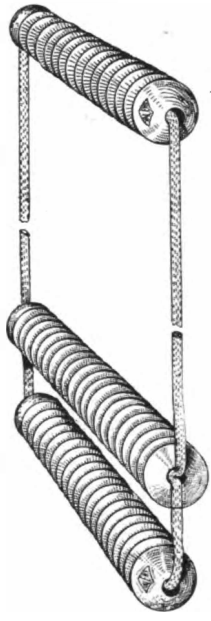


Fig. 366. Valens Triplet-Disc-Zone-Analgesics. They ar used as shown in Fig. 367.

Fig| 367. Valens Triplet-Disc Analgesics in use. Notis that the pressure is given on both "back" and "front" of foot at same time.

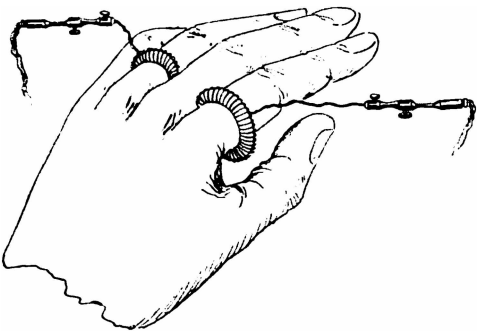


Fig. 368. FitzGerald's "Therapy Zones" used electrically. The Pulsoidal Current or intermitted rapid-sine current should be employd.

Fig. 369. Dr. White's Uni-Polar Post-Nasal Electrode. This can be used electrically or non-electrically. The metal is insulated except the ball tip.

Fig. 370. Dr. White's Bi-Polar Post-Nasal Electrode. The metal is insulated except the ball tips.

Fig. 371. Showing my Tumbler Electrode to be used for Zone Therapy. The *tecnic* is to hav two such tumblers connected up to the Pulsoidal Current of the rapid-sine current, intermitted, and hav the patient place the fingers of the indicated zone in the water and then turn on the current. This same electrode can be used for charging a basin or glass dish of water. The electrode is made of copper with a cord-tip receptacle solderd on.

Electric Cautery in Zone Therapy

The tecnic for using electric cautery in Zone Therapy is to hav a fine platinum tip (Fig. 372) a cherry red and attack the teeth in the zones that one wishes to treat. Many times I think some other method is better than this, but some hav found this method effectual and therefore I mention it.

The FitzGerald *"Crucial Test"* for finding a diseasd tooth is made with this fine, cautery tip. The slightest touch on a "bad tooth" wil cause pain, but on a sound tooth it is not felt.

Chemical Cautery in Zone Therapy

For attacking the different parts of the fauces, as wel as the orofarynx, some use tricloracetic acid ful strength on the end of a cotton-tipt probe. Such probes ar shown in Fig. 375. Probably the 50% tricloracetic acid would be a solution strong enuf for the average practitioner. This method of treating certain zones is very satisfactory in the hands of some.

For treating the tonsils, probably this method is one of the best, especially in treating crypts that may be the seat of infection or pain thru some other part of that respectiv zone.

The very best modality for treating tonsils is the Quartz Light. Nothing yet known can compare with it, if correctly used.

Fig. 375 shows probes suitable for *chemical* cautery work. Wooden applicators can be used but many prefer the metal ones with ruffend tips. This illustration shows both aluminum and steel applicators.

Exact Size

Fig. 372. *Aseptic Cautery Applicator* for use in Zone Therapy and Teeth Testing. Notis the fine platinum tip. The regular, hevy tips wil not do, as they carry too much heat.

Fig. 373 Shows the intermitting handle used with cautery applicator shown in Fig. 372.

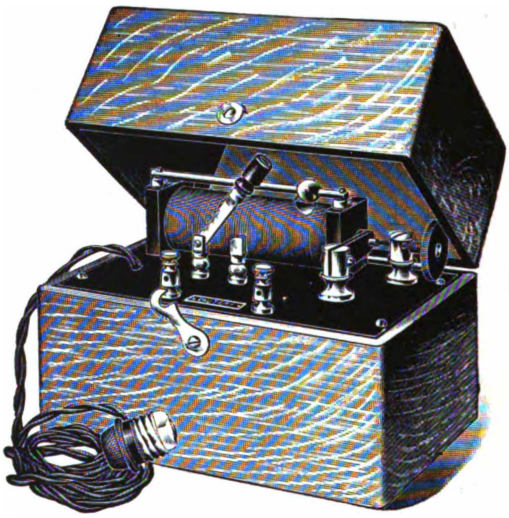


Fig. 374. Shows a very complete Universal Cautery Transformer (McI. B. & O. Co.), which can be used on both the alternating and the direct current. If anyone has a cautery attachment to their offis electrical outfits, that can be used as wel as this portable device.

There ar many other cautery outfits on the market.

Fig. 375. *A* shows an aluminum applicator with ruffend ends without cotton on end, and with cotton on end.

B shows a steel applicator with both ends ruffend, with cotton wound on it and without it.

These probes can be used for giving medicated treatment to the nasofarynx or to the orofarynx.

They can also be used for giving chemical cautery treatment, using ful strength or diluted tricloracetic acid as the chemical,

Sfincter Dilation in Zone Therapy

I hav alredy mentiond and illustrated methods of stretching the mouth and cheeks, nose and ear in using Zone Therapy. Another very effectual method is stretching the anus. This is especially beneficial in spasms and irritation along the intestinal tract, especially for diarrea. Many cases of diarrea can be cured by one stretching of the sfincter ani.

The tecnic for this is to cover the finger with a piece of lubricated gauze and press it up into the rectum. The rufness of the gauze, along with the pressure, is very effectual. One finger wil often do but many times two fingers, to be enterd at the same time, ar necessary.

Some cases of asthma ar entirely relievd by this Zone method of stretching the sfincter ani.

This same method can be used for stretching the vagina, but probably the speculum wil do just as wel, or lubricated fingers may be better.

The rupturing of a very tight *hymen* wil often cure asthma and many pains thru the abdomen. This is especially true when the hymen is very thick and unyielding and has some disturbing effect upon the central zones in the body. A wel lubricated finger or fingers is best for this.

A hooded *clitoris* wil often hav this zone effect of irritating and disturbing the various zones of the body. It should be unhooded and adhesions carefully freed.

Electricity in Zone Therapy

The first electric current that I used for experimentation in Zone Therapy was the rapid-sine wave in an interrupted manner, altho the method of interruption was very crude. I used interrupting handles or disconnected intermittently the electrical connections. (Years ago I often obtaind effects co-related to Zone Therapeutic effects when using the Le Duc current. This current no doubt can be used under certain conditions in Zone Therapy, but for practical work, the interrupted rapid-sine wave seems infinitly better.)

One of the first things for which I used my Metronomic Interrupter was the use of electricity in Zone Therapy. Since I hav perfected this interruption of the rapid-

sine wave and have developt what I hav named the *Pulsoidal Current,* I use that current entirely for Zone Therapy. I use Mode A, as grafically illustrated in Fig. 251. This is without doubt the best current and mode for Zone Therapeutic treatment and for Zone Analgesia or Zone Anesthesia.

Mode D can be used for Zone work but so far my experience seems to show that Mode A is better. Of course any of the Modes, A, B, C, D, E, or F can be used in Zone Therapeutic work. Each operator can judge for himself, after trying these various modes, as to which is the best for his particular case or work. That there is a markt difference in the therapeutic effect of these various modes, there is no doubt. If anyone is in doubt regarding this, let him try it out on himself. As I hav said in my Lectures to Physicians, *try out every modality on yourself before you try it out on a patient.* In that way you wil be in a better position to judge as to its merits or demerits. At least you wil know how it feels.

Electricity surely enhances the effects of Zone Therapy. It should be used in the physician's offis and the non-electrical methods used at home or at the bedside.

CLINICAL CASES: ZONE THERAPY

Fig. 376 is a reproduction of a fotograf of the lady Dr. William H. FitzGerald of Hartford, Conn., reported to the Connecticut State Dental Association held at Hartford, Conn., April 21, 1914, as being afflicted with a cancerous growth in the left side of the neck. The pain and inconvenience of this growth wer entirely controld by Zone Therapy. I examind this lady on two different occasions by the Bio-Dynamo-Chromatic method and can definitly say that she is suffering from cancer.

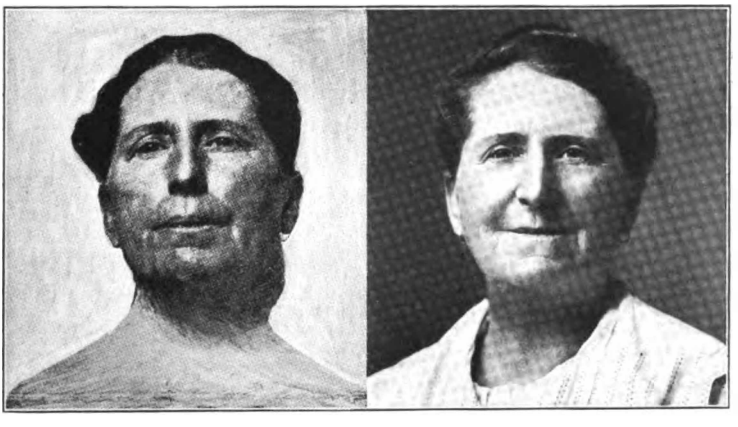


Fig. 376 Fig. 377

Fig. 377 is a reproduction of a fotograf that this lady showd me, which was taken seventeen months after the fotograf represented in Fig. 376 was taken.

Altho the last time I examind her she gave the reflex for cancer, by treating herself several times a day by Zone Therapy she appears and says she feels like an entirely new woman. The fotografs speak for themselvs. The growth cannot be seen, but it can be palpated. It is now only about the size of a hickory nut.

The following is the report of this case that Dr. Fitz-Gerald gave when he first reported it to the Connecticut Dental Association:

When I first saw this patient (January 9, 1913), the enlargement in the neck was stony hard and excedingly painful to the touch. She had not been able to lie down for nine months, and had not taken any solid food for three months; could open the mouth only slightly and with great difficulty. There was absolutely no infection thru the tonsils, but there was every evidence of infection having traveld from the left jaw in the third zone. I induced speedy relaxation of the neck (it was absolutely relaxt in four treatments) thru pressures with a dry cotton-wound applicator and also with a pencil moistend with tricloracetic acid in varied strengths from 25 per cent. to a saturated solution, thruout the appropriate zones in the mouth, nose, and epifarynx. This patient responds quickly to pressure, and accurately traces sensations of glow or numness from the mouth to the extremities and *vice versa.* These sensations ar almost immediately followd by lines of anesthesia. Note the neck of this patient seventeen months later. Patient, thru pressure on fingers of zones involvd, keeps side of neck constantly anesthetized, and therefore free from irritation, with consequent absorption of growth.

Cases: Zone Therapy

The following case was reported to me by R. H. T. Nesbitt, M.D., Waukegan, Ill., under date of Oct. 2, 1915. As this report regarding painless delivery in a primipara of small stature with a child weighing 9½ pounds is similar to many others I hav receivd, it is all the more striking.

Case 240

"As soon as severe contractions began and the mother was beginning to be very nervous and complaind of pain, at which time I generally administer cloroform. I began pressing on the soles of the feet with the edge of a big file, as I could find nothing else. I gave pressure on the dorsal surface with the thums of both hands on the digital-metatarsal joint. I exerted pressure over each foot for about three minutes at a time. The mother told me that the pressure on the feet gave her no pain whatsoever.

"As she did not seem to hav any pain at all, I was afraid there was no advancement. To my great surprise, when I examind her about ten or fifteen minutes after this pressure on the feet, I found the hed within two inches of the outlet. I then waited about fifteen minutes, and on examination found the hed at the vulva. I then prest again for about one or two minutes on each foot, the edge of the file being on the sole of the foot and my thums over the digital-metatarsal joints as before. In this way I exerted pressure on the sole of the foot with the file, and pressure on the dorsum of the foot with my thums, doing each foot separately. The last application of pressure lasted about 1½ minutes to each foot. Within 5 or 10 minutes the hed was appearing and I held it back to preserve the perineum, but it made stedy progress, the hed and shoulders coming out in a normal manner. Within a few minutes the child was born, crying lustily. The mother told me she did not experience any pain whatever and could not believe the child was born. She laft and said, "This is not so bad."

"Another point that is very remarkable is that after the child was born, the woman did not experience the fatigue that is generally felt, and the child was more activ than usual. The way I account for this is that pain inhibits progress of the birth and tires the child, but as the pain was inhibited, the progress was more stedy and thus fatigue to both mother and child was avoided."

This is a report from G. Murray Edwards, M.D., Denver, Colo., under date of Jan. 18, 1916.

Case 241

"Mrs. McK., age 35; pregnant four and a half months; multipara. Placenta praevia, aborted Dec. 5, 1915, curetment, Dec. 7, 1915. Temperature 99, puls 80. This case occurring during Dr. White's lecture course in Denver, when Dr. FitzGerald's pressure method of analgesia was being discust, I decided to try it out for the first time on this patient. She being a very nervous woman, I felt a little reluctant in the experiment. I did not tel her, however, I was going to use a new method, but quietly placed three elastics, an eighth of an inch wide, on each foot, one around the large toe at the first joint, and one around the others similarly in pairs. After fifteen minutes, preparing my in-

struments in the meantime, I told her we wer redy and while I did not intend to use cloroform, instructed her carefully to tel me immediately if she felt any pain whatsover. The curetment was conducted in every detail as tho she wer under general anesthesia, and as I questiond her frequently as to pain, she always came back with a smile and a negativ reply. I removed fully a teacupful of placental tissue in about ten minutes, while the patient past the time joking, and when finisht, she assured me she felt much better than when we started, as she was nervous, looking forward to the anesthetic. This I consider a typical case and hav no misgivings as to its working generally. I shal certainly repeat the method and report results later."

Case 242

Another of my pupils reports the following case:

"Dr. ——, an eye, ear, nose and throat specialist, brot his wife to see me for defness. For thirty years she had herd nothing with the right ear and only a little with the left. I gave her two treatments according to the Fitz-Gerald Zone Method, after which she could hear a small tuning fork one-half inch away from the right ear and one inch from the left. After a few more treatments, her hearing so wonderfully improved that she could hear a whisper with the right ear. This after being 'stone def' in that ear for thirty years, and after having visited 'all the noted aurists in this country and abroad.'"

Case 243

Another of my pupils has given the following report:

"Patient, male. Gonorreal arthritis. Right nee joint so painful that the patient could not bear to hav it toucht. Flexion of the right leg was practically impossible. Most of the pain was on the inner side of the nee.

"Pressure on the dorsal and plantar surfaces of the great toe, as wel as at the end of same, was instituted and carried out for one or two minutes. At the end of that time pain had disappeard from the nee. Upon palpation the soreness seemd to hav vanisht. I then began carefully flexing the leg, and to my surprise and that of the patient, the nee could be flext perfectly without any pain whatsoever."

(As this doctor makes a specialty of treating painful joints by means of heat, light, mud baths, and electricity,

and has had a great deal of experience in this line of work, I was very much gratified to hear him say that of all the cases he had ever treated he never had anything seem so miraculous as this. He further stated that he had tried all his methods of treatment to alleviate this man's pain and to be able to flex the nee, but without avail; yet Zone Therapy, applied at the proper zone, brot about almost immediate results.)

The following ar a few from a great many cases in which I hav successfully employd Zone Therapy:

Case 244

Some time ago a lady of about 35 years, cald at my offis to get relief from a very severe hedake, which, she said, had been persistent for three weeks. She said she had been to several doctors and they gave her opiates and hypodermics, but the relief was only temporary. I did not suggest a thing, nor giv her any idea of my purpose, but took hold of her hands and began pressing at the indicated zones. I told her I wanted to see how her skin reacted to pressure. After about three minutes I askt her if she would locate with her hand, just where the hed pain was. She hesitated, lookt up at me and said, "Do you use mental therapy? The pain is all gone for the first time in three weeks, unless under the effects of narcotics."

I explaind to her how to relieve herself, if the pain returnd. If she could not get relief in that manner, I told her to come to see me again. There certainly was no suggestion in this case.

I saw her a year later and she said she controld her hedakes perfectly by zone therapy.

Case 245

Several cases of tinnitus aurium and of toothake, as wel as of hedakes, I hav very quickly relievd by zone therapy. A very small proportion of cases wil not, it seems, react to zone therapy, but the majority wil. There is no doubt a good reason for the failures, such as blocking of the "zone paths" in some manner, or the tecnic is faulty.

Case 246

I want to mention one failure. In San Francisco I gave a demonstration in an offis, and with one doctor there I

could not get any effects from any zone, no matter how I tried it. It was the only failure out of a great many upon whom I hav tried this method of anesthesia.

Case 247

One of my pupils, to whom I taut the FitzGerald method, recently wrote me as follows:

"I hav used the FitzGerald Zone-anesthesia method for operation on a number of turbinate and other nasal obstructions. I hav also used the same method in three obstetric cases. In these cases I had very gratifying results.

"While this system wil not work equally wel in all cases, yet there is enuf in it to satisfy the most skeptical.

"Its failure to work is, no doubt, due more to faulty tecnic than to the method. Better results wil come with more experience."

Case 248

Another of my pupils reports the following case:

"One of my patients had been operated upon for cancer of the tung. After the operation he was in great distress because he could not eat. He could not bite at all without suffering great pain. He had been under opiates some time, which made his general condition worse. It occurd to me to see what I could do with Zone Therapy. By making firm pressures over the proper digital zones, this patient was, within three minutes, able to clench his teeth together without any pain. I used no suggestion whatsoever, and the patient did not know what I was trying to do.

"Zone analgesia supplanted morfin in this case. Later the patient died, but both he and his wife wer grateful for the relief Zone analgesia had given him."

Case 249

I hav seen a case that had been diagnosed as cancer of the larynx, and to which I gave the same diagnosis, that was being greatly improved and the patient made comfortable by the FitzGerald method of Zone Therapy.

Case 250

The following was reported by J. H. East, M.D., Denver, Colo., under date of March 25, 1916:

"This patient gave birth to a child three years ago and had a very serious and difficult labor. The last confinement was Jan. 6, 1916. When I arrived the patient was in great pain, but within less than 15 minutes the labor pains wer normal and the patient ceast to make any outcry. Birth of child came on wonderfully rapid and seemingly without much pain to the patient. The nurse who had charge of the case had seen many confinements but said that this was the best she had ever witnesst.

"I think this patient with the old methods would hav had a very serious delivery. The application I made was putting elastic bands on the toes and then putting a hard piece of wood for the patient to press her feet on. For her hands I used a notted sheet large enuf for her to clinch tightly. (I used these crude things, as I had nothing better at hand.)"

Case 251

The following ar two reports of cases by J. F. Roemer, M.D., Waukegan, Ill., under date of July 31, 1916:

"A case of tri-facial neuralgia of more than two years' standing. Nothing had relievd permanently. The patient had been advized to hav the nerv cut. When I returnd from Detroit, after taking Dr. White's course there, I found he had been unable to speak or eat for five days, so severe was the pain, which radiated over the entire left side of the face, extending to the lower jaw, the upper jaw and up into the left eye. The pain was of a sudden, sharp, piercing nature. I applied rubber bands on the distal joint of the thum and forefinger of the left hand, and in less than 10 minutes he was talking and laffing, and we had quite a visit. Nothing was said to him about the pain or what the rubber bands wer applied for. I told him to apply them every half hour if the pain continued and as the pain grew less to lengthen the interval of application. I saw him yesterday and he laffingly said, 'Oh, I apply them now once a day because I do not want to get out of the habit and I am afraid I might forget.' I askt him if he had any pain, and he replied, 'Once in a while a slight reminder.' He is enjoying life better than he has for years, thanks to 'those fool rubber bands,' as his dauter cald them. In fact the remark she made when I applied these to her father's fingers was, 'What fool idea is that?' "

Case 252

"A young traveling man came into my offis with an inflamed face. He said his teeth wer sore and he could not eat, and he could hardly drink as his teeth hurt him so. He could not close his teeth together. A dentist lookt them over but said he could do nothing, and the patient was reluctant to hav me even examin them.

"I found sore spots on the inside of the thum and first finger and made pressures on them with a comb. About 5 or 6 minutes after I got him to talking about his business and in about 10 minutes I askt him how his teeth wer. He closed his mouth firmly and said, 'Wel, they ar stil a little sore but do not hurt at all. What did you do?' I showd him how to apply the rubber bands in order to make the pressure, and he reported the next day that he had enjoyd a good night's rest, due to the relief I had given him. I saw him the following day and he said his teeth wer not sore at all. A more thankful and grateful patient I hav rarely seen, thanks to the FitzGerald idea so splendidly given to us at Detroit by Dr. White."

Case 253

The following is an extract from a letter receivd from R. H. T. Nesbitt, M.D., Waukegan, Ill., dated July 25, 1916:

"About Zone Therapy. My work is not classical. I do not use it as much as I should. I forget and use older methods. However, when I do use it I *always* hav success in relieving pain anywhere, in most cases permanently, and when repeated often enuf the patient is *cured.* I do not refer to desperate, cronic nor malignant cases. In lancing abscesses no other anesthetic is required. Severest hedakes and migrane yield almost instantly.

"In obstetrics I hav almost completely discarded cloroform at the close of the second stage, where I used to almost always use it. In the first stage, Zone Therapy relieves the nagging pains without retarding, but rather promoting dilation. In the second stage delivery is hastend. Women seem so quiet and easy one would think 'nothing was doing' until on examination, you are surprized to see what has been accomplisht. For this work I use a serrated strip of aluminum 1-16 inch thick imbedded in a piece of wood of convenient size, or else I use a seven-inch aluminum comb,

pressing the teeth against the inner part of the sole of the foot or near the ball, alternating from one foot to the other. When I hav an assistant both feet ar manipulated at a time and that aids very materially. I exert as much pressure as the patient can bear without pain. When I hav an assistant wel traind, I am going to try Zone Therapy for instrumental delivery.

"In acute and cronic appendicitis, pressure on the right side of the 2d lumbar vertebra quickly relieves the pain and reduces the inflammation."

Case 254

The following is a report receivd from J. H. East, M. D., Denver, Colo., under date of August 19, 1916:

"I want to relate a case I had last Monday night. I was cald to see a primipara, who had been in labor six hours, and on examination found that the cervix was dilated to about the size of a dime, rigid, and the waters had past away the morning before. Patient worn out by constant nagging pains and had no nourishment during that time. I put rubber bands on the wooden disc pressure devices that I got of you, and applied these devices over the tarsal metatarsal joints of both feet. I told her I wanted her to lie down and go to sleep. In a few moments she was snoring and rested thirty minutes. Awakend and had a pain and then dozed off. I told her this would be her case for four or five hours and that I, myself, must hav some rest. I laid down and was awakend by the nurse in two hours. She said the pains wer becoming quite hard. I found the os dilated and hed protruding wel down thru the os. I then massaged the perineal muscles as they wer very tense, which seemd to relieve her of the pains in the perineal region and also the pains in back. She rested between her pains usually, and in less than an hour the child was born. Perineum left in good normal condition, the placenta past awav with little or no trouble. As there seemd to be a great deal of hemorrage, I used Crede's method for 10 or 15 minutes, when everything seemed to be O.K. After looking child over and satisfying myself that the patient was alright, I left. I saw the mother and child the following morning and found both doing nicely. Having no after effects, she thankt me for not giving any cloroform or narcotics, as she knew that she could not hav felt so wel if she had been

under their influence. I surely hav to thank you for bringing this method to my attention."

Case 255

The following is an extract from a letter from Charles C. Reid, M.D., Denver, Colo., under date of Sept. 6, 1916:

"Since receiving instructions from you as to the use of Zone Therapy, I hav had an opportunity to test it under many conditions. I hav by its use relievd many hedakes, frontal, top, back and side; some cofs; dysmenorrea; eye pain; ovarian neuralgia; and pains in the back.

"I also had a case of obstetrics which was under the influence of Zone Therapy for four and one-half hours. Altho the work was new to me and my tecnic was necessarily crude, yet this child was deliverd without cloroform or ether and without any sharp pain at any time. With the perfecting of the tecnic, I am confident that 'twilight sleep' wil be greatly surpast, because practically painless childbirth can be accomplisht with all the dangers of 'twilight sleep' eliminated.

"My test case in this inhibition method was not an easy one. The mother was twenty years of age, primipara, medium size. The baby was very large (weighing ten pounds), its hed being too large for the pelvic outlet without much overlapping of bones at the fontanelles and sutures. I was cald at midnight and was there about 12:30 a. m. Getting scrubd up, I made an examination to see the progress. Dilation had begun, pains wer coming every 8 to 10 minutes, and everything seemd normal. She was beginning to cry out a little with the severity of the pains. I gave her some ruf, round pieces of wood about six inches long to grip in her hands. They wer about the size of a broomstick with carvd ridges around them. Some similar sticks wer put on her feet for her to press against.

"She labord four hours, having strong contractions, gradually getting more frequent. The inhibition on her hands and feet did not seem in any way to interfere with normal uterin contractions. I frequently askt her if she had any acute pain during her hardest contractions. She would bear down with all her might, but at no time was she botherd with acute pain. She would invariably anser that she was suffering no pain with the contractions.

"When the baby's hed reacht the pelvis, it stuck and for about sixty minutes with all her work and strong con-

tractions no progress was made. She had exhausted her strength against what seemd a practical impossibility. Now came the most crucial test for Zone Therapy. It had to be an instrumental delivery or at least assisted by instruments. I hav had many forceps deliveries, but always used cloroform, except at this time, before introducing the instruments. After the instruments wer boild and everything arranged, while the ridged wooden cylinders wer stil clampt on her feet, the right instrument was introduced with little complaint of pain. Then the top one was placed and the two redily lockt. There was no crying out nor complaint of acute pain even when traction was made to assist contractions. A very slow delivery of the hed was made without laceration. At once the cord was discoverd to be twice around the child's neck and the hed was blue. The cord was removd quickly and a rapid delivery of the shoulders was made. It took about 5 minutes to get the child to breathing with artificial respiration and alternate sprinkling of hot and cold water.

"If this woman had been doped with morphin and scopalamin or any other opiate, it can easily be imagind that another 'blue baby' and another little coffin would hav been added to the long list of 'twilight sleep.'

"A few minutes after the delivery of the afterbirth, the woman said she was feeling fine. She complaind of no after sickness or soreness, had no abnormal temperature at any time and no extreme exhaustion. When the shoulders of the child came thru there was a small laceration which was immediately repaird."

Case 256

The following cases that hav come under my personal care ar interesting:

A man about 45 years of age, who had been suffering for at least six months with coccyalgia and had tried all kinds of treatments including the most improved method of spinal manipulation, came to me for treatment. I tried the ordinary electrical methods and also manipulation of the coccyx, but all to no avail. Nothing would relieve the pain except radiations from the big lamp. Strange to say, I did not think of Zone Therapy until I had been treating this patient for about a week. Then it occurd to me that rubber bands on the fingers might be efficacious. I gave

the patient ten rubber bands about one-eighth of an inch wide and two inches long, telling him to wind them around his fingers every two hours and leave them on until the fingers became blue and then remove them.

He followd out my instructions and within three days the coccyalgic pain had subsided and within three weeks he reported himself as wel.

Case 257

On one of my trips across the continent I notist a conductor stooping as if in pain. As he came to my seat I askt him what the trouble was and he told me he had had lumbago for six weeks and had been confined to the hospital for three weeks when he had to leave owing to rush orders from the division superintendent. He said every move he made hurt him as if he wer being tortured in a vise.

I askt him to come out to the lavatory as soon as he could and I would talk with him about it. When he came in I lookt at his finger nails and told him I made a specialty of "studying fingers." I put rubber bands around his thums and fingers of both hands. He lookt bewilderd and acted as if he thot I needed a "keeper." I talkt with him about various subjects, not mentioning what I was trying to do or what I expected, thereby eliminating suggestion. Within 10 minutes the train suddenly stopt and the conductor got up hastily and went out. When he returnd he lookt at me with a curious expression and inquired if I wer a doctor. I made some evasiv anser and he remarkt that he thot when I put the bands on his fingers that I was "nutty" but "those fool bands" or something else had relievd him of all pain in his back for the first time in six weeks. I took the bands off his fingers and when I saw him the next night he said his back was absolutely wel.

Case 258

At one of my recent lectures in Chicago a doctor came to me complaining of hedake. He said he had had it for two or three days and wanted to know if I could do anything for it. I askt him where the pain was located and he said it was over the central portion of the forehed, reaching down to about the middle of the eyes. I took six spring clothespins and clampt one over each thum and one over

each of the first and second fingers, clamping them right over the nails. I told him if they hurt to not mind but leave them there until I returnd in about 5 minutes. I was delayd and did not see him for about 10 minutes when I removed them. He said that pressure treatment relievd him almost at once and said "The funny part of it is that I hav no pain in my back that I hav had for several days."

Case 259

Another doctor presented himself to me, asking if I could suggest anything for pain in his shoulder. He said the pain had been growing worse until his shoulder was so disabled that he could not put his hand in his pocket. I clampt spring clothespins on the fingers of the right hand, which was the side affected, and left them there for about 10 minutes, after which I removed them and told him to put his hand in his pocket. To his surprise, he could do so. I then askt him to swing his arm up over his hed and around as if swinging dum bels. He did so and said there was only a little pain.

From the symptoms I diagnosed the case as one of periferal nerv pressure caused by contraction of some of the shoulder muscles. This could hav been caused either by a sudden blast of cold air blowing over the warm skin, or from some strain that had brot about temporary stasis.

Case 260

When I was holding a lecture course in Kansas City in Sept., 1915, *A. E. Walker, M.D., of Anthony, Kansas,* brot in a patient who said he had coft every day for the past twelv years. As Dr. Walker was acquainted with this man from the beginning of his trouble and had formerly been his physician, I took his report of the case as being true. The man was a farmer about 40 years of age of good habits. Twelv years ago he had an attack of bronchitis from which he had never recoverd. He coft from the time he arose in the morning until he retired at night, but when warm in bed he did not cof. He had been told by many physicians that he had tuberculosis.

I examind the man Bio-Dynamo-Chromatically and found he had no tuberculosis. In testing his puls I found it was running at the rate of 110 to 120. His respiration was 18. His throat was very much inflamed. His conjunctiva

was congested. His eyes did not protrude and he was not nervous. He had a sunny disposition in spite of his cof. His blood pressure was abov normal. His right puls had a greater tension than the left, modified as he turnd from facing east or west to north or south. Looking strait at this man's neck, no enlargement of the thyroid could be seen; but looking at it laterally, an enlargement of the thyroid could be seen. Therefore my diagnosis was *habit cof* and reflex hyperthyroidism.

I inserted a post-nasal probe thru his nose to the posterior wall of the farynx and askt him to place his finger where he felt it. He placed his finger at the interclavicular notch. I exerted intermittent pressure for about 5 minutes. He did not cof more than twice the rest of the day. He reported the next morning for treatment and I gave him the Pulsoidal Current over the 2d and 3d cervical vertebrae, and probe treatment over the posterior wall of the farynx as on the previous day. His puls came down to 80.

I told his physician to follow out this line of treatment and for home treatments to hav him place rubber bands around his thums and first two fingers four times a day, leaving them on until the finger tips wer blue. I hav recently receivd a report from Dr. Walker stating that this man is "perfectly wel." At least his cof has entirely subsided and his condition in every way is greatly improved.

Case 261

Case reported by Luman L. Wescott, M.D., Chicago, January 12, 1918:

Receivd hurry-up call to see woman, 32, in consultation with two physicians. Examination reveald wel defined round tumor, three inches in diameter, in transverse colon, left side, center of which corresponded to "second zone." Left rectus muscle rigidly contracted. Hart action irregular, lungs pronouncedly edematous; unconscious for seventy-two hours. Oil enemas, calomel and numerous other mesures—massage, etc., faild to relieve.

I decided to use Zone Therapy and, having spring clothespins with me, I applied them to the second and third left toes. Within one minute patient began to move, in another minute turnd over and opend her eyes, in 10 minutes lungs cleard, hart stedied and fecal mass began to move and past within an hour.

History reveals nothing. Has had frequent attacks lasting from three to ten days—unconsciousness always present.

B-D-C test two weeks later reveald some form of insanity, and upon inquiry found it to be a religious form.

No recurrence since April 28, 1917.

The following six cases were reported to me by *Charles R. Clapp, M.D., Los Angeles, California.*

Case 262

Mrs. R., aged 82. Had been suffering with supra-orbital neuralgia with a tic for two months. Had treated her with homeopathic remedies and did what I could for her in the regular way without any special improvement. Patient could not wash her face nor comb her hair as the slightest touch caused excruciating pain in right side of hed and face.

Was suddenly cald to see her one afternoon because she was suffering such pain that she said she could not endure it any longer. As I had just lernd of Zone Therapy thru your lectures, I thot I would giv it a trial, so I cald for a comb and treated the ends of the fingers of right hand and also back of fingers and hands. In five minutes or less the pain had ceast.

I cald the next day. Patient had slept all night and washt her face and combd her hair. She has had no further attacks for a year.

So imprest was the old lady with the treatment that she has kept a comb by her ever since for fear she would hav a return of the trouble, but she has had no use for it.

Case 263

Mrs. C., aged 40. Sick two weeks with lumbago. Could be moved only on a sheet. Had had two physicians without any benefit. After a few minutes' treatment with combs in palms of both hands she was able to move over on her side and remaind there while I gave her a treatment with a therapeutic lamp over the lumbar area. Did not hav to call again as she sent word next morning that she was better.

Case 264

Mrs. R., aged 25. Had pain in epigastric region for three days. Had used oil enemas, etc., without any relief.

I treated thum and index finger of right hand with no result. When I began on the thum of left hand, she said with a smile, "There, that strikes the spot." In less than five minutes she was free from pain and has had no return of same. This is another clincher for attacking the *correct zone.*

Case 265

Mrs. J., aged 22. I was cald at 2 a. m. Patient complaind of severe pains with little flow. Diagnosed the case as dysmenorrea and practically amenorrea. I askt for a clean towel and taking the tip of the tung with a pretty firm hold, carefully drew it so as to bring strong pressure on its root. In less than four minutes I repeated the operation, and in 10 minutes the patient was resting easily.

Cases 266 and 267

Mrs. L., 40 years of age. Was suffering from severe cramping pains during an attack of dysmenorrea. These pains had been activ for about 24 hours with very slight flow. I took a napkin, took hold of her tung and gave strong traction. Within a very few minutes she was relievd of her pain and I instructed her how to treat herself if the pains should return.

I could giv very many more cases to show why I am so enthusiastic over Zone Therapy. I never could hav believd what it would do if I had not actually seen and done the work myself. I am more than delighted with it.

The following was reported by Orin W. Joslin, M.D., Medical Director Dodgeville General Hospital and Pine Grove Sanitorium, Dodgeville, Wis., under date of Jan. 5, 1918:

We hav been using Zone Therapy as a routine mesure in our hospital and sanitorium, especially for pain, and we very seldom fail to get satisfactory results. We hardly ever think of using morfin any more. We have never had a case of "gas pains" that did not respond inside of 10 minutes to Zone Therapy.

The Pulsoidal Current, especially used on the eyes and the 2d and 3d cervical vertebrae, produces many surprising results in various conditions, both obvious and obscure. We hav almost uniform success in stopping down too rapid puls by means of the Pulsoidal Current applied in this manner.

A KEY TO ZONE THERAPY*

By

WILLIAM H. FITZGERALD, M.D.

1—Thum.
2—Index finger.
3—Middle finger.
4—Ring finger.
5—Little finger.
I—Great toe.
II—Second toe.
III—Third toe.
IV—Fourth toe.
V—Fifth toe.
Z—Thums and all fingers.
O—All toes.
N—Tung pressor.
E—Wire hair brush.
T—Rubber bands or umbrella rings.
H—Therapy Zones.
E1—Therapy Grip or Dr. White's Comb Electrodes
R—Thum and index finger.
A—Cotton tipt probe.
P—Mouth and farynx.
Y—Nose and farynx.

A dessert or tablespoon handle may be used insted of the tung pressor when necessary.

H, when required, should be worn from 3 to 15 minutes several times daily.

When necessary the treatments herein outlined may be given safely in conjunction with any other form of treatment.

*This "Key" wil appear in *Zone Therapy*, second edition, publisht by I. W. Long, Columbus, Ohio.

The fingers should be used for dilating orifices wherever indicated.

Hand can be used to clasp rist or ankles for relieving pain on that side of body.

Ascertain caracter of secretions of mouth thru litmus test at least of every patient. It shold be alkalin.

Patient should be taut how to exert pressure on anterior pillars of fauces with *2* or *3* and how also to be able to go over entire *P* without exciting gagging. Practis wil accomplish this.

It must be rememberd that pressure may be exerted over any resistant portion of the anterior half of a zone to relieve or overcome pathological conditions in that section of zone.

The same applies to posterior pressure on posterior half of zone or zones.

One-half minute of pressure is usually the minimum limit of time necessary to overcome pain, while twenty minutes is usually the maximum. Start pressures gently and gradually increase to the hurting point. Encourage patient to endure the pain excited by the instrument, especially on the extremities. The pain is always more markt in zone or zones affected, but gradually subsides. If it does not, remove the pressure temporarily or attack a more resistant area in the same zone or zones.

The dividing line in the hed is approximately from an inch to one and one-half inches behind the fronto-parietal suture. The dividing line on the extremities is an imaginary line drawn horizontally across the center of the tips of the thums, fingers and toes and continued vertically up the sides of same at center.

The effectivness of Hydrotherapy, Electrotherapy, Mecanotherapy, etc., wil be greatly increast if combined with Zone Therapy.

TREATMENT

(*See Illustrated Lecture Preceding this "Key"*)

ABDOMEN, pain in

T, *H*, or *E1*, on *Z*, or *O*, or both, or grasp appropriate foot or hand of patient and press firmly with both hands from 1 to 8 or 10 minutes. (Metal is preferable

where pressure is necessary. Elastic bands, hollowd out clothes-pins, etc., ar useful but do not approach the "Therapy Zone," in efficiency.) See Stomac.

ABORTION (miscarriage), prevention of.

Stroke front of hands and feet with *E*, or *E1*. (The so-cald back of the hand is really the front. It corresponds with the top or front of the foot.) Strokes may be carried over rists and up forearms slowly.

ANGINA PECTORIS

T, *H*, or *E1*, on *Z*, or *O*, of left side or both, and pressure may also be exerted as abov.

R, or web clamps on appropriate finger and thum webs.

Hook pressure. See Inferior Maxilla; also Defness.

ANESTHESIA

Treat according to zone with *H*, and as otherwise recommended in text.

1, or *A*, on inferior dental and lingual nervs wil often anesthetize that half of the body. Pressure should be continued at least 3 minutes.

H, on *Z*, and *O*. Patient should bite firmly a flat piece of metal, e.g., back of therapy comb. Where the occlusion is normal the patient wil get best results. See Toothake.

The Zone Therapy "Bite" is recommended especially where the occlusion is faulty.

ARM

T, *H*, *E*, or *R*, on *Z*, *O*, or both and manipulation as recommended under Foot, etc.

ASTHMA

Traction of soft palate with finger or hook probe.

T, or *H*, on *1*, *2*, *3*, *4*, or *5*, or all five, also on *O*, from 10 to 15 minutes several times daily.

Press lip firmly against teeth with *2*.

Stretch lips. See Bronchitis.

Hook pressure. See Inferior Maxilla; also Defness.

Attack anterior sections of zones thru downward pressures in outer half of nostrils and posterior sections of zones by like pressures in posterior half of nostrils. Also nostril stretching.

T, or *H*, on *1*, *2*, and *3*.

1, on median line of hard palate and to right or left of it as the condition requires.

H, and *E1*, on appropriate thums, fingers and toes.

A, and cautery contacts on appropriate zones in *P*, and *Y*.

BACKAKE

See Lumbago.

BLADDER

T, *H*, *Z*, or *R*, on *Z*, *O*, or both from 3 to 20 minutes several times daily.

Bite tung or lips.

E1, on appropriate sections of extremities.

N, on tung.

(The firm setting of jaws or biting upon metal is helpful in all treatments especially if the occlusion is normal.)

Hook pressure. See Inferior Maxilla.

BLOOD PRESSURE, to lower

T, *H*, *E1*, or *R*, on *Z*, *O*, or both on and between joints and wel into web between thum and fingers.

Pressure with *Z* on zones *1*, *2*, and *3* in epifarynx.

BLOOD PRESSURE, to raise

H, and *E1*.

Rapid stroking over abov areas for thirty seconds several times daily, and for several minutes over the entire body morning and night.

BONES

(See Toothake.)

BRESTS

T, *H*, or *E1*, on *Z*, *O*, or both.

N, on tung.

Pressure of cautery, galvano or chemical (as strong tricloracetic acid lightly applied), on gum margins in appropriate zones.

Hook pressures. See Inferior Maxilla.

Hook pressures on clavicle and sternum (See Goiter).

BRONCHITIS

Pass *A*, thru nose to epifarynx. When exact location is reacht the patient wil feel a sensation in his throat corresponding to zones in bronchi affected. Pressure should be firmly maintaind on appropriate zone or zones from 1 to 3 minutes, or longer. Best results ar often obtaind thru use of medicated probes.

1, *2*, and *3* (firm pressure) on bridge of nose.

T, *H*, or *E1*, on *1*, *2*, and *3*, several times daily.

N, on anterior third of tung.

A, on tung and beneath it. Also on floor of mouth. Dr. White's Palate Pressor can also be used.

A, or plain in *Y*, on zones involvd.

Stretching lips. See Cold Extremities; also Inferior Maxilla.

Stand behind patient and with both hands covering his lower jaw press firmly, using hook method. (The fingers as hooks insted of thums as when patient treats himself, the thums exerting a counter pressure on front of jaw.

Mastoid, tragus of ear and maxillary articulation should also be treated. See Inferior Maxilla; also Defness.

Hook pressures on clavicle and top of sternum. (See Goiter.)

BRACHIAL NEURITIS

T, or *H*, on *Z*, 10 to 12 minutes several times daily. In obstinate cases treat *O*.

Find sensitiv areas on thigh corresponding with those on arms and use pressure as in Foot. If areas in arm ar not too sensitiv, direct pressure may be made.

Draw anterior pillars of fauces (affected side) forward with hook-probe and hold for several seconds exerting pressure on corresponding zones in *P*, and *Y*.

CANCER. (See Text.)

COLD EXTREMITIES

Scratch front and palm of hands with *E*, *E1*, or finger nails for 5 minutes or use probe pressure in epifarynx.

Rectal dilatation. (Stretching lips with fingers, inserting index and middle fingers of both hands inside lips and cheeks and stretching same in all directions, often has same effect as dilation of rectum.)

Manipulate as in Foot, etc.

Pressure on tragus and lobe of ear. (See Defness.)

CONJUNCTIVITIS

T, *H*, or *R*, on *1*, *2*, and *3*. (See Eye.)

COF

Same as for Bronchitis.

CONSTIPATION

N, on posterior one-third of tung, 8 to 10 minutes.

Firmly interlock hands for same period.

Pressure on posterior wall of farynx at median line.

Patients become more and more susceptible to pressure thru practis.

Stretching, etc., as in Cold Extremities.

Pressure with hookt thum under chin. See Inferior Maxilla.

Pressure on sacro-coccygeal articulation and tip of coccyx.

Dilate rectum with lubricated cotton gauze on finger. Sponge when necessary as in proctitis, prolapse, etc.

CORYZA, (hed colds)

Interlock fingers firmly for five minutes or longer.

T, *H*, or *R*, on *1*, and *2*.

Bite tung firmly for several minutes at intervals.

1, on hard palate.

1, and *2* (firm pressure), on bridge of nose.

A, with or without medication. Saliva of the patient (which is practically the same as the nasal secretion) may be used when normal on *A*.

Probe without cotton or with medicated cotton-tipt probe in nose, epifarynx and floor of mouth. Dr. White's Palate Pressor also excellent.

See Sneezing; also Hay Fever. Pressure on ear. See Defness.

Defness

Pressure or friction as required may be applied at any point thruout appropriate zone or zones.

Bite hard from 5 to 10 minutes on Zone Therapy "Bite," or something similar.

The "Therapy Bite" is indicated whenever inhibition and relaxation is desired thru the teeth and jaws. Appropriate zones may be attackt individually in this way.

A, prest behind upper wisdom tooth and wel into the angle of the jaw.

Stretch soft palate with retractor or index finger.

T, *H*, or *R*, on *4*, and *5*. In catarral defness *1*, and *2*. Firm pressure on *IV*, and *V*, with *E1*, at 3d joint (palmar surface) *4*, and *5*.

Treat all joints of appropriate fingers.

Pressure on the 4th and 5th zones on tung directly in front and to the side of the anterior pillars, drawing the pillar downward and outward at an angle of from 85 to 95 degrees.

Manipulate *Z*, as in Foot, and *O*, morning and night.

R, firmly pressing mastoid, especially tip.

Finger pressing tragus of ear affected firmly into aural canal from 1 second (where relaxation is desired) to 3 minutes or longer, also pressure on the lobe and on all the cartilages of the external ear.

Pack tightly (for from several minutes to an hour) the outer half of aural canals with slightly moistend cotton when local or general inhibition is desired.

Pressure at angle of the jaw and between maxillary articulation and tragus of ear (externally). Patient should open and close his mouth frequently during articulation treatment, and as this is more or less painful unless he is instructed to press very firmly with finger and thum tips (of side being treated) on the arms or the seat of his chair. Patients should be instructed to practis most of these treatments at home twice daily while under treatment, and their ears should be tested frequently by an aurist familiar with Zone Therapy to be certain they ar being benefited and not injured. See Inferior Maxilla.

DIARREA

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
Wide abdominal belt or bandage. Strap tightly.
Dilate rectum with Dr. White's Rectal Dilator, or something similar, or with two fingers.

EAR

Same as for Defness.

ENTERALGIA

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
N, on tung.

EPILEPSY

Dilatations from 8 to 10 minutes daily of mouth, nostrils, external aural canals (pack outer half of canal tightly with cotton for a few minutes), rectum, etc.
Sometimes dilation of vagina or urethra is necessary. Removal of nasal obstructions, especially when found in middle meatus.
T, *H*, *E1*, or *R*, on *Z*, or *O*.

EPISTAXIS

Press *2* against upper lip under nose.
Flat probe with lintine inserted thru to posterior wall of nasofarynx, following instructions in text.
H, on *1*, and *2* of involvd side.
It may be necessary when bleeding involvs other zones to use *T*, and *H*, on *O*, and *Z*.
Firm pressures on tragus of ear. See Defness.

ESOFAGUS (irritation or erosion)

T, *H*, or *R*, on *1*, *2*, and *3*, and *I*, *II*, and *III*, when necessary.
1, on middle of hard palate.
N, on tung.
Therapy-web-clamp, or spring clothes pin, or pressure, with *R*, between *1*, *2*, and *3*.
Hook pressure on chin and sternum.

Eye

Pressure with probe or fingers on muco-cutaneous junctions in nostrils on side of affected eye over 2d division of the ofthalmic nerv.

To improve lacrymal drainage in cases of contracted or hypertrofied inferior turbinates pass a nasal applicator between the inferior turbinate and antral wall and press the anterior half of the turbinate firmly toward the median line of the nostril and hold for several seconds.

See Hay Fever.

T, *H*, or *R*, on *1*, *2*, and *3*, and *I*, *II*, and *III*, when necessary.

Pressure on bony prominences surrounding eye.

Pressure on tragus, etc. See Defness.

Eustachian Tube

T, *H*, or *R*, on *2*, *3*, and *4*, or *II*, *III*, and *IV*, or on both fingers and toes when necessary. Pressure on tragus of ear, etc. See Defness.

Hav patient swallow frequently during this treatment.

Falling Hair

Scratch all surfaces of forearms and hands with *E*, or *E1*, 10 to 15 minutes daily.

Rub finger and thum nails together briskly several times daily for two or three minutes.

Foot—Nee—Hip

T, *H*, *E1*, on *O*, and *Z*.

The foot and ankle correspond with the hand and rist on the same side of the body.

The nee corresponds with the elbow and the hip corresponds with the shoulder of the same side.

Firm manipulation of the joints of the thums, fingers, hand, elbow and shoulder affect plesantly the corresponding joints of the lower extremity.

Pul, flex, extend and rotate parts under pressure, retaining the varied positions from several seconds to minutes if necessary.

After a treatment of the hand and rist compare it with the other hand and rist for lightness, flexibility, etc., and then note corresponding differences in the feet. It may take

a few minutes to make this apparent, but the connection between hand and foot on the same side of the body wil surely be appreciated.

The entire zones thus treated ar often relievd of irritation, congestion, etc., so that when both upper extremities hav been treated the patient is usually completely relaxt. The lower extremities may be treated similarly when necessary. If, because of an injury it is quite impossible to treat directly the affected extremity, as for instance a right foot, the right hand should be appropriately manipulated before attempting to treat the foot.

If pain exists in any one section of the upper extremity, choose the corresponding section of the lower extremity at a point which is identical with the painful part on the same side, and exert firm pressure with finger tips or metal comb, etc. If the abov treatment or pressure on or between appropriate fingers or toes does not relieve the pain, rotate the joints, or between the joints outward for pain on inner side or front of extremity and hold in that position for several minutes. Rotate inward and hold as abov for pain on outer side of extremities. This applies to all the joints and surfaces between all the joints thruout the body.

GALL BLADDER

T, H, E1, or *R,* on *1, 2, 3,* and *I, II, III.*

R, on web between *1,* and *2.*

H, can be pusht into web and thus exert pressure there.

Hook pressures on right side of jaw, etc. See Inferior Maxilla, and Defness.

Hook pressure on clavicle and brim of pelvis in zones 2, 3, and 4.

Pressure on ribs effectiv in same zones.

Zone Therapy "Bite."

GOITER

A, past thru nostrils to epifarynx and firm pressure should be directed downward. When involvd zone is reacht a sensation wil be felt in the thyroid gland.

If zone 1 only be involvd treat it by firm pressure of zone 1 in epifarynx. If all zones ar involvd treat thru firm pressure on all zones in epifarynx. Metal or cotton-tipt, medicated probes may be used.

T, H. E1, or *R,* on *1, 2, 3,* and *I, II,* and *III.*

Pressure on lower jaw. See Inferior Maxilla and Defness.

Hook pressure with fingers.

Pressure on clavicle (collar bone—all surfaces) and top of sternum (brest bone) and counteracting pressure with thums in appropriate zones beneath goiter.

Pressure on bony prominences surrounding eye.

H, on *Z,* or even on *O,* when all zones ar affected from 5 to 20 minutes.

Traction of tung. See Hiccof.

Hay Fever

Press upper lip firmly against teeth with 2.

1, on hard palate directly under nose from 4 to 8 minutes, or use Dr. White's Palate Pressor.

N, on anterior one-half of tung several times daily.

A, on appropriate zones in *Y,* with or without cotton.

Bite tung. *1* and *2* (firm pressure) on bridge of nose.

H, on *1,* and *2,* (both hands).

Hook pressure. See Inferior Maxilla; also Defness and Bronchitis.

Dilatations. See Epilepsy.

If the nasal secretion is acid, a cotton-wound applicator may be moistend with an alkalin solution to good effect—if alkalin use acid. In elther case use A, without cotton also.

The surgeon should never hesitate to operate at the height of an attack when surgery is indicated for relieving nasal obstruction.

Hedake—Pressure 1 to 5 minutes.

(*a*) *Frontal.*

1. Center—1, or *A,* just back of alveolar process in median line.

2. Right side—1, or *A,* just back of alveolar process near 1st bicuspid.

3. Left side—1, or *A,* back of alveolar process near 1st bicuspid.

Firm pressure at rist front (junction of hand and rist).

H, on fingers to correspond with affected zones in hed.

E1, on appropriate sections of extremities.

If pus is present, as in abscess frontal sinus, pain wil return when pressure is removed. Quartz Light is of great aid in "sinus trouble."

(*b*) *Vertex.*

1, or *A*, in center of hard palate.

(*c*) *Occipital.*

1. *Center*—*1*, or *A*, on posterior edge of hard palate in median line, or use Palate-Pressor.

2. *Right side*—*1*, or *A*, on posterior edge of hard palate near right 3d molar tooth, or use Palate-Pressor.

3. *Left side*—Pressure near left 3d molar, as on right. When necessary these pressures may be exerted over affected zones on posterior wall of farynx.

Firm pressure with *E1*, at junction of hand and rist (palmar surface).

If constipated, bowels should be thoroly evacuated.

Overcome pressures in middle meatus (one or both sides) thru operation when necessary. Don't forget the Quartz Light with special applicators.

(*d*) *General.*

E1, on skul abov or below seat of pain.

T, *H*, *E1*, or *R*, on *1*, *2*, and *3*, of each hand.

Pressures—See Defness.

HART

T, *H*, or *R*, on *1*, *2*, *3*, and *4*, of left hand and *1*, and *2*, of right and corresponding toes when necessary.

Pressure on any resistant section of abov zones where inhibition is desired, but to stimulate the rapid stroke is best.

HEMORROIDS

Same as for Constipation

HICCOF

Z, firmly interlockt.

Pul tung out ful length and hold it firmly from 1 to 3 minutes or longer.

N, on middle of tung.
Firm pressure on tragus of ears.
Pressure on tips of *Z*.

HYSTERIA

Same as for Nervousness.
Dilatation as in Epilepsy.

INFERIOR MAXILLA

Finger and thum pressures as in Superior Maxilla.

INTESTINS

T, *H*, *E1*, or *R*, on *O*, or *Z*, or both.
N, in *P*, and *A*, in *Y*, when necessary.
Hook-pressures. See Inferior Maxilla.
Pressures over appropriate zones thruout abdomen.

INSOMNIA

Firmly interlock fingers for 10 minutes.
Stroke forearms—all surfaces—with *E*, *E1*, or finger nails, 5 to 10 minutes.
Press firmly with *1*, and *2*, abov bridge of nose.

NEE

T, *H*, *E1* on *R*, or *O*, or elbow of same side. See Foot, etc.

LABOR

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
R, and *E1*, on metatarsofalangeal joints.
Dr. White's Disc-Zone-Analgesics.
Clinch teeth or bite firmly on back of metal comb or "Therapy Bite."
N, on tung.
Hook-pressure on chin and to angle of jaw. See Inferior Maxilla.

LACRYMAL DUCT

See Eye.

LARYNGITIS

Pul tung and work it slowly from side to side.

N, on centre of tung.

A, under tung, floor of mouth and *Y*.

H, on *1* and *2*.

Hook-pressures. See Inferior Maxilla; also Defness.

Moderate pressure and manipulation of hyoid bone, thyroid and cricoid cartilage.

Absolute *nasal* breathing. Plaster mouth gard, if necessary.

LIVER

T, *H*, *E1*, or *R*, on *Z*, *O*, or both of right side and *I*, *II*, and *1* and *2*, of left side.

N, on middle third to right of tung.

LOCOMOTOR ATAXIA

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.

Treat pain in local zone.

N, on tung.

Dilatation as in Epilepsy.

Dr. White's Disc-Zone-Analgesics.

Pressure on anterior pillars of fauces.

LOSS OF VOICE

Take napkin and grasp tung pulling it slowly but firmly in all directions.

2, or *A*, under tung. Dr. White's Palate-Pressor under tung.

N, on middle of tung.

T, *H*, or *R*, on *1*, and *2*.

Hook-pressure on chin. See Inferior Maxilla.

Tricloracetic acid (strong) lightly applied over floor of mouth, etc. See Laryngitis.

LUMBAGO

Deep pressure of *E1*, on palmar surface of *Z*, and soles of feet from 3 to 20 minutes. Dr. White's Disc-Zone-Analgesics act admirably here.

T, *H*, *E1*, or *R*, on *Z*, and *O*.

A, firmly prest on appropriate zones on posterior wall of farynx.

E1, on rist. The painful sections on rist and finger joints when firm pressure is exerted wil be found in the same zone or zones as pain in the back. These ar the spots to attack and pressure should be continued until pain is overcome.

Pressure on anterior surface of cervical vertebra thru farynx, attacking pain in the center of the back thru median pressure, pain in the left of the back to the left of the median line and pain in the right of the back to the right of the median line in zone or zones affected. The lumbar vertebræ may be reacht thru pressures in the pelvis.

Galvano-cautery to posterior margins of lower gums.

If vibrator is used begin with tips of *Z*, and if necessary, *O*.

E1, to affected part or abov or below it.

Hook-pressure on lower jaw in zone affected. See Inferior Maxilla.

Pressures may be made over any resistant sections of posterior half of appropriate zone or zones.

Sensitiv areas over posterior surface of spine may often be treated even more satisfactorily thru pressure than thru percussion or manipulation.

Lungs

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.

A, on *P*, and *Y*, in appropriate zones.

N, on floor of mouth and all surfaces of tung—*N*, medicated if necessary.

Pressures on mastoid and tragus of ear on side affected. See Defness.

Pressures on sternum, clavicles, ribs and scapulæ in appropriate zones. See Bronchitis.

Lymfatic Gland

Treat according to zone.

Find cause of infection and then treat condition thru appropriate zones. See Goiter.

Menses

(*a*) *Menopause.*

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.

N, on tung.

(*b*) *Menorragia.*

Gentle stroking on front of hands with *E*, or *E1*.

(*c*) *Dysmenorrea.*

Pressure on both sides of sacrooccygeal articulation.

Pressure on pubic bone just over uterus.

N, on posterior one-third of tung for 2 minutes or more.

T, *H*, *E1*, or *R*, on *1*, *2*, and *3*, of each side.

Interlock fingers.

A, *2*, or *3*, on appropriate zones on posterior wall of farynx.

R, *H*, or web-clamps on webs between thums and index fingers and index and middle fingers.

Hook-pressure on chin. See Inferior Maxilla.

(*d*) *Amenorrea.*

N, on middle third of tung from 3 to 15 minutes.

Migrain

See treatment for Hedake.

Morning Sickness

T, *H*, *E1*, or *R*, on *1*, and *2*, of each side and webs between.

T, *H*, *E1*, or *R*, on *1*, and *2*.

Mumps

See Parotitis.

Nasal Catar

Be certain your patient breathes at all times thru the nose.

Cartilaginous and bony obstructions and hypertrofies should be removed surgically. For congestion patient should be taut to use metal applicator, with or without medication.

The plaster mouth-gard recommended originally by me should be worn when necessary.

H, on appropriate fingers.

1, and *2*, (firm pressure) across bridge of nose.

NERVOUSNESS

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
Strongly interlock fingers.
Clinch fists and set jaws.
Patient should brush the entire body from tips of fingers to tips of toes for five minutes night and morning with *E*, or *E1*.
See Foot, etc.

NEURASTHENIA

See Nervousness.

NEURALGIA

Treat local zone affected.
Teeth and nose should be carefully examind for infections and undue pressure, especially for pressure from hypertrofies in middle meatus of side involvd.
H, on thums, fingers or toes of zones involvd.
Press tragus on side involvd or pack the outer third of aural canal tightly with slightly moistend cotton. See Defness.

NUMNESS OF EXTREMITIES

Stimulate affected part with *E*, *E1*, or finger nails or with pointed instrument for two or three minutes a few times daily. Therapy Zones, if worn too long, wil sometimes cause numness. This should be garded against.

OVARIES, congestion of, neuralgia.

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
Hook-pressures on jaws; also on pubic bones when necessary.

OPTIC NEURITIS

T, *H*, or *R*, on *1*, *2*, and *3*; also corresponding toes.
1, on inferior dental nerv at exit.
Pressures on orbit.

PARALYSIS AGITANS

T, *H*, *E1*, or *R*, on *Z*, *O*, or both for 5 minutes, several times daily.

Firmly interlock fingers from 10 to 12 minutes.

Dilatations as in Epilepsy.

Examin teeth; also body generally for sensitiv spots.

Manipulations and pressures on extremities. See Foot, etc.

Where toes contract exert pressure for a few minutes with comb across front of hand and fingers on affected side: or step firmly on toes of affected foot and continue pressure 3 to 15 minutes.

PARALYSIS

Treat zones involvd thru extremities with *H*, and *E1*; also treat zones involvd thru mouth, nose, etc.

Dilations as abov.

See Foot, etc.; also Defness.

Dr. White's Comb Electrode, or other electrical devices ar most helpful in all forms of paralysis, and may be applied to zones individually or collectivly whenever pathological changes from any cause ar not benefited by ordinary pressures.

PAROTITIS

T, *H*, or *R*, on *2*, *3*, and *4*, or corresponding toes.

Pressure with *1*, inside of cheek opposit molar teeth, counteracting pressure on outside of cheek with *2*. Pressure on *2*, and *3*, of affected side usually sufficient.

Hook-pressure on jaw beneath parotid gland when necessary. See Inferior Maxilla.

PERITONSILLAR ABSCESS

See Whooping Cof; also Sore Throat.

PLEURODYNIA

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.

N, on tung.

PLACENTA—to facilitate expulsion of.

Stroke front of hands with *E*, or *E1*, and finger nails.

NEUMONIA

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
N, on tung.
A, on appropriate zones of *P*, and *Y*, with and without medication.
Hook-pressures, dilatations, etc. See Inferior Maxilla and Defness; also Lungs.

PROSTATE

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.
N, on tung.
A, as in Neumonia.
Hook-pressure on chin. See Inferior Maxilla.
Pressure on pubic bones.

PRESBYOPIA

H, on *2*.

PYLORIC-SPASM

Traction on the tung. See Stomac.

QUINSY

See Peritonsillar Abscess.

RECTUM, proctitis, prolaps, etc

See treatment for Hemorroids.

RELAXATION

Interlock fingers.
Firm pressure on finger and thum tips, either together, or on arms or seat of chair.
Set jaws or bite piece of metal.
Stretching lips. See Cold Extremities.
See Foot, etc. See Inferior Maxilla.
Pressure on bridge of nose. Hook pressures on lower jaw, etc.

REUMATISM

Treat zones involvd. Zone Therapy wil aid in locating the infection and then assist in its removal.
Dilatations. See Cold Extremities. See Foot, etc. See Sciatica, Lumbago and Brachial Neuritis.

SCIATICA

Find infection in mouth or elsewhere, if possible. (3rd molar teeth often responsible). You wil find sensitiv area on hand at junction of hand and rist (palmar surface), tightly press with *E1*, and place *H*, on appropriate fingers, or if the sensitiv area corresponds with web, between fingers press with *E1*, or *1*, and *2*, or use therapy-web clamp, or web-pinching and pressing as shown in illustrations. Find sensitiv area on arms of side involvd and exert pressure with *E1*, on *Z*. (See Foot ,etc.)

Scratch *1*, *2*, and web between with *E*, or *E1*.

SEA SICKNESS or Car Nausea

Stroke hands (front) and arms with *E1*, or finger nails.

Interlock fingers.

Twelv inch bandage or belt tightly about waist.

SNEEZING

Firmly press below inner canthus on side of nostril involvd. Bilateral pressure when both nostrils ar involvd.

Press tragus of ear on side involvd. Both sides when necessary.

Press *1*, against alveolar process under nose, or press firmly on bridge of the nose and under canthus as abov.

Set jaws.

SORE THROAT

H, on appropriate fingers and thums.

Attack epifarynx as in Bronchitis. See Whooping Cof.

Pressure on tragus (See Tinnitus), lobe and mastoid of ear. Hook pressure. See Defness.

Pressure with comb over sensitiv areas front and palmar surfaces of hands.

Following tonsillotomy, firm pressure from 2 to 10 minutes with comb across front of hand and rist at junction of same wil relieve pain in the throat and produce relaxation of jaws. Sensitiv areas on fingers and thums corresponding with those at rist may also be treated. Treat palmar surfaces similarly when posterior sections of zones ar involvd. The feet may be treated similarly over corresponding areas.

STOMAC

(*a*) *Motor Insufficiency*

Scratch *1*, *2*, and web between with *E*, or *E1*. *T*, *H*, or *R*, on *1*, and *2*.

(*b*) *Gastric Ulcer.*

Find sensitiv area on front of rist or corresponding section of foot (junction of hand and rist) and press firmly. If acutely sensitiv over stomac area, ulcerations may be stated to be on anterior wall of stomac. If the front of the rist has no such painful area try palmar surface in corresponding location. If sensitiv, ulceration is almost certain to be found on posterior wall of stomac. Continue pressure over this area until pain disappears. Work on corresponding section of foot if necessary.

H, or *E1*, on appropriate fingers from 3 to 15 minutes for acute pain.

(*c*) *Indigestion.*

Same as for Pain.

(*d*) *Pain.*

T, *H*, *E1*, or *R*, on *1*, *2*, *3*, *4* and webs between. Traction on tung.

(*e*) *Vomiting.*

Scratch *1*, *2*, (left) and *1*, *2*, *3* (right) and webs between with *E*, or *E1*, and corresponding sections of foot.

It is sometimes necessary to treat *Z*, *O*, and webs.

(*f*) *Tympanitis.*

Same as for Pain.

TESTES

T, *H*, *E1*, or *R*, on *Z*, *O*, or both.

N, on tung, or biting of tung.

Pressure on all surfaces of chin; also on pubic bones. See Inferior Maxilla.

TIC-DOULOUREUX

See Neuralgia.

"Tickling Throat"

See Bronchitis; also Sore Throat.

Tinnitus Aurium

Firm pressure with *N*, on middle third of tung from 5 to 8 minutes.

Traction of palate.

Raise nail of *4* or *II* at centre. *H*, on appropriate areas of *1*, and *2*.

Forward pressure on tragus with finger at intervals of 2 or 3 seconds or longer for 15 seconds or more.

Hook pressures. See Inferior Maxilla; also Defness.

Toothake and Anesthesia for Extractions.

(*a*) *Superior Maxilla.*

R, or *1*, on posterior palatin nerv affects last 4 teeth.

R, or *1*, on anterior palatin nerv affects incisors.

Press lip directly over tooth.

Press over roots with *R*.

T, *H*, or *R*, on *1*, for incisors and, as a rule, the cuspid.

T, *H*, or *R*, on *2*, for the bicuspids.

T, *H*, or *R*, on *3*, or first two molars.

T, *H*, or *R*, on *4*, for the third molar.

T, *H*, or *R*, on *4*, and *5*, is sometimes necessary for the third molar.

(*b*) *Inferior Maxilla.*

Press lip or cheek of the patient against gums beneath appropriate teeth.

Press beneath roots with *R*.

1, on inferior dental and lingual nerv often produces anesthesia of lateral half of mandible.

Pressure with *R*, on lower jaw (exteranlly) in individual zones is most advantageous. Every zone in the body may be coverd in its entirety in this manner. The thum should be firmly hookt beneath the under surface of the chin or other appropriate sections of the jaw when individual posterior sections of zones ar to be treated, the fingers exerting a counter

pressure on the lower outer surface when both sections of zones ar to be treated. Any section of the lower jaw, including the angles and maxillary articulations may be treated similarly. Patients should firmly press appropriate finger and thum tips on arms of the operation chair to counteract any pain that may be excited during treatment.

Pack tightly outer half of auditory canals with slightly moistend absorbent cotton to desensitize pain in jaws.

Hook pressure. See Defness.

TORTICOLLIS

See Lumbago.

TUMORS

Treat zones affected from jaws, *P*, and *Y*.

Dilatations as above.

H, on appropriate fingers and toes.

E1, on appropriate fingers and toes.

TUBERCULOSIS-PULMONARY

T, *H*, *E*, or *R*, on *Z*, *O*, or both.

N, on tung.

E1, on extremities.

A, on appropriate zones of *P*, and *Y*, with or without medication.

Stroke the entire body briskly for five minutes with *E*, twice or three times daily. See Lungs.

Hook pressures. See Inferior Maxilla; also Defness.

UTERUS, tumors of.

A, or *N*, on floor of mouth under tung; also Dr. White's Palate-Pressor on floor of mouth.

T, *H*, or *R*, on *1*, *2* and 3, of each hand.

Traction on tung.

See Menses.

Hook pressure on chin. See Inferior Maxilla.

Whooping Cof

Patient is usually conscious of an irritation in throat. If zone 1 on left side of neck is affected, attack zone 1 in epifarynx. If the irritation is elsewhere, attack zone indicated thru epifarynx. Among infants the irritation is usually found in zones 1 or 2, or both, and these zones should be treated thru the epifarynx. As a rule, we use medicated probe. But often only the probe is necessary. Pressure should be continued for about 3 minutes, as in Asthma.

Whooping Cof is usually overcome in one treatment, seldom ar more than three treatments required.

Writer's Cramp

E1, on fronts, back and tips of *Z*, or *O*.

N, on tung.

Draw anterior pillar of fauces on affected side forward with hook probe and hold for several seconds. Then press same pillar inward and teach patient to do the latter when necessary.

Wry Neck

See Lumbago.

PART SEVEN

VIVISECTION VS. HUMANITARIANISM.

A true physician must of necessity be humane. Our medical colleges ar incorporated for teaching men and women to be physicians and if they ar really honest in endevoring to turn out true physicians, they must necessarily teach humanitarianism.

It is a wel known fact that familiarity breeds contempt. Familiarity with any line of work tends toward making the worker callus. It is known that persons who devote themselvs to doing deeds of kindness show it in their faces. Their deeds ar reflected in their countenances and they carry sunshine where'er they go. On the other hand those who ar traind to deeds of violence show a forbidding countenance that is stampt with brutality.

Could anything be more incongruous than for an institution of lerning to pretend to educate persons to be *physicians* and at the same time teach them violence and brutality? This has been forcibly brot home to me on more than one occasion, but one example wil suffice to prove my point. I once knew a wel known physician who, to all appearances, was a master of his art. His specialty was surgery. He invited me to witness one of his operations so I could gain some information regarding certain reflexes. After he had partly completed his operation he said he would let the patient come out from under the ether and I could make my experiments and then he would sew her up. He said this in as matter of fact a manner as if he wer talking of sewing up sacks of grain. I refused to hav anything to do with any such plans and the experiments wer not made. When I tried to argue the matter with him he said that she would not suffer long. *This doctor had lernd brutality in practicing vivisection.* Now, if a surgeon wil let an animal suffer and wil let a poor woman suffer, he wil let anyone suffer if he thinks it wil not curtail his income.

Years ago I had occasion to do some work in an institution which carried on the diabolical work of vivisection.

I saw a boy going into the place with a beautiful Persian cat which he said he had found in a back yard. It had a bow about its neck and a little bel, showing that it was someone's pet. I askt the boy why he brot it there and he said that they paid 50c or more for cats and dogs, and the better the animal, the more he would get. The director of the department orderd this cat strapt down and the hed fixt in such a manner that it could not bite. Then I saw the "students of medicin" puf cigaret smoke into its face. When I remonstrated, I was told that if I did not like what was going on in that department I could get out. Under the circumstances I had to keep quiet and see this animal cut to pieces without any anesthetic being given it. I also saw a large Newfoundland dog cut open and experiments made on its hart without giving it anything to relieve the pain. I remonstrated with the superintendent of this department and receivd only insults.

I reported this institution to certain individuals who had it in their power to make the report public, and it was made public, and certain physicians vowd that they would "get even" with me in time. This was not a "third class" institution but one of the best in America. I mention it to show how people can become so callust as to become brutes.

I believe it was Claude Bernard who said that the fysiologist is a man so possest and absorbd by a scientific idea that he does not hear the animal's cry of pain, that he is blind to the blood that flows, that he sees nothing but his idea and organisms which conceal from him the secrets he is resolvd to discover. When such a notorious vivisector has tortured animals to deth and written about his experiments in such a way that no one can dispute them, why in the name of decency should thousands of others be made brutes by repeating the same experiments? Ninety-nine hundredths of the vivisection work is done out of sheer curiosity. This is not scientific and has no bearing on science. Neither hav we any more moral right to torture an animal than some Hun has to torture us.

We often hear it said that the life of a guinea pig or a cat is not worth so much as that of a baby and therefore some experimenting must be done on them to save the baby. This is the vivisectionist's method of deceiving the public. Torturing an animal does not save anybody's life.

With Dr. Ph. Mareschal, I can hartily say:

"As to vivisectors, let them be altogether separated from the medical profession, so far as studies and diplomas ar concernd. Their calling is not identical with ours. Their associating with us is the cause that some of our colleags hav lost *the moral helth, the habits of gentleness, of kindness, and of compassion, which ar essential in the practis of our profession.*

"To fysiologists let us say: Stand apart from us and as far away as possible. Go on mangling and torturing, since the law actually does not forbid your doing so, but would that the State decline to label you as medical men, for there is deep incompatibility between your profession and ours."

I might ad that there is as great an abyss between the true physician and the vivisectionist as there is between heven and hel.

The New York Anti-Vivisection Society is to be congratulated for the great work they ar doing in educating the people against this ruthless and hartless seudo-scientific work. Thru the excellent magazine, "The Open Door," this society is educating the people, and they ar little by little enacting laws to prohibit this diabolical practis.

The following article is from the pen of Diana Belais, President of the New York Anti-Vivisection Society:*

VIVISECTION

By Diana Belais

That the trend of the highest thot and conviction among the advanst public is toward humanitarianism is beyond question. The recognition of the altruistic principle, the appreciation of unselfishness, the realization that each of us is in a large mesure, his brother's keeper, all these concepts of a noble conduct, a noble life, ar now, as never before, having a noteworthy and practical influence upon men and women in their relation to each other.

The inherent rightness of altruism and unselfishness has fully demonstrated itself, no word of denial ventures forth, and once acknowledged, once become part of our con-

*New York Anti-Vivisection Society; The Open Door Publishing Company, 456 Fourth Avenue, New York City.

sciousness, we cannot do other than stand resolutely by and faithfully maintain the faith that is in us, lead where it may.

The principle of altruism, then, being accepted as a fundamental, integral, necessary part of our highest moral equipment, of our evolutionary improvement as individuals and as a race,—can we place any limit to its beneficence? Can, indeed, a principle be limited in any way? In the very nature of things, is it not limitless in its actions, embracing all? In short, is it not like two and two make four—something upon which we can rest fixt and immutable? The anser can be nothing else, nor less, than yes.

This being so, we at once include as members of our world the entire animal creation. Our principle is invariable, and we must follow it to its uttermost teachings, while because of the humbleness and helplessness of our charges, we ar under especial pressure to look zelously after their needs and protect them from trespass.

Even these lowly creatures, whom some would only spurn, giv us not infrequently compelling exampies of our principle. How often does the dog sacrifice his own life, which he must love, for his master, or even for strangers? How often has the dog carried his bone to some other il and homeless brother dog? The birds wil fly to the call for help from other birds. Can we do less than they?

A call for help comes to us with resounding force from these lowly ones, and this call is for protection—from what? Alas, from ourselvs. Alas, that all hav not yet realized the glorious, exalting principle of kindly regard, kindly protection for the lower animals, so like ourselvs in their instincts, (Victor Hugo says: "The littlest instinct is greater than the greatest reason"), their capacity for pain, their love, affection, jelousy, the recognition of clenliness, consciousness of wrong-doing, and even in their reasoning powers, different only in degree,—and differences of degree, we should note, exist among the highest animals, ourselvs.

The Vivisecting Room, is, of all other places, that which most demands our undeviating attention, because vivisection can be nothing else than cruel, and attended by atrocious suffering. No matter what plausible and experienst self-excusers may assert, one moment's reflection, one glance of clear, cold, common sense, wil convince anyone that vivisection is inseparable from pain and misery.

The plea of anesthesia is a negligible one, we know, because of the facts gaind from the Medical Reports of physicians; because anesthesia occasions a great deal of trouble to the operator; because it is expensiv; because of the great difference between anesthetizing the human and the sub-human being. For these reasons, since the vivisector desires to experiment upon live tissues, upon throbbing hart, excited brain and quivering nervs, you can redily understand that he is not likely to do anything that wil defeat that end, or necessitate the interruption of the experiment—not to mention the loss of time and the expense in procuring another dog with which to begin all over again; and also because of the unnatural condition of the animal which ful anesthesia would produce,—hence, an abnormal subject from which to draw sound deductions. Sir Lawson Tait, F.R.C.S., says: "There is no experimentation possible with anesthesia from which correct conclusions could be drawn. If conscious, their pain invalidates the deductions; if unconscious, then the experiments ar admittedly worthless because the reaction cannot be the same as in a normal condition."

Dr. Hoggan, a pupil of Claude Bernard, the prince of Vivisectors, says "that complete and conscientious anesthesia of animals is seldom even attempted," and that "anesthetics ar the greatest curse of vivisectible animals."

Dr. de Noé Walker testified before the English Royal Commission that "if it is supposed that animals under experimentation ar thoroly insensible, it is the greatest delusion that ever was."

Dr. Charles Bell Taylor, one of England's most eminent physicians and surgeons, said, that "the only result from anesthetics in connection with animals was, *to anesthetize the public regarding the great sufferings inflicted upon them in vivisection.*"

These revelations present a serious condition to all right-minded people, because it shows us the monstrous fact that we ar being deliberately deceivd by the vivisectors, and that they ar obtaining a sufferance from the public for themselvs and their cult which is fraut with vital consequences—to the animals? Yes, to them thru their unspeakable sufferings, but also to ourselvs, who bid fair to become the upholders, defenders, and perpetrators of cruelty by our toleration of vivisection.

We cannot calmly submit to this fate, for cruelty is in itself a thing which cannot be accepted upon any terms as a necessary factor of our human development, nor of our daily life. Civilization becomes a mere veneer, a meaningless and vicious hypocrisy, if we, for one moment, admit the need or acceptance of cruelty as a part of it.

To knowingly accept even suppositious benefits from cruelty is to be cruel ourselvs. No sofistries can cloak this fact. Granting for a moment that good results *may* hav accrued from vivisection, this does not lessen the actual cruelty involvd, nor does it absolv us from the indictment of supporting it. The primary fact of cruelty and our indulgence in it is not to be denied, and our responsibility for it is justly fixt.

And here comes in the great duty of ourselvs to ourselvs. Can we afford to accept and indulge our own—even tho vicarious—cruelty, for whatever sake, and to which must be attacht the dark stigma of selfishness and hypocrisy? For the guise under which our cruelty wil masquerade is that of "the good of humanity." In this suave plea the selfishness and hypocrisy of mankind ar so closely intermingled that one cannot be separated from the other. For when we say "Humanity," do we not sutly include and plead for ourselvs?

The doctrin of "evil that good may come" is a relic of the dark ages and, if we avail ourselvs of it, is proof that morally we hav not advanst far. The fact that this moral obliquity is today evidenst most strongly in our relations to the sub-human, does not make it any the less a sin than it was formerly when it exprest itself in other relations and beliefs in life. It is an evil principle, *per se,* which asserts that immoral acts ar justified by so-cald "good" motivs, or that "good"—suppositious or otherwise—may come.

We all know the great amount of sofistical argument put forth about this practis of vivisection to the effect that the object is for the benefit of mankind. But is it really done for the benefit of mankind? We receive some profound enlightenment from Dr. Chas. Richet, of Paris, a Twentieth Century vivisector who reveals the real truth concerning this deceptiv claim, that vivisection is done with the idea of helping humanity, and he goes so far as to say: "I do not believe that a single experimenter says to himself when he givs curare to a rabbit, or cuts the spinal marrow of a dog, 'Here is an experiment which wil relieve or wil cure the

disease of some man.' No, in truth, he does not think of that; he says to himself: 'I shal clear up an obscure point, I wil seek out a new fact' . . . This is why we pass our days in fetid laboratories surrounded by groaning creatures, in the midst of blood and suffering, bent over palpitating entrails."

One could almost think this naive revelation of a vivisector was written as an accusation by an Anti-Vivisectionist.

It is caracteristic of the vivisector that his appeal to the layman is made without the slightest regard to ethical considerations, and that he deliberately sinks to the cultivation of the worst caracteristics of our weak, undevelopt humanity, *i.e.*, cowardis, selfishness and cruelty! For it does cultivate all these miserable qualities to instil into human minds the thot, "Let animals be tortured if only *I* may escape." In this connection I hav only to point out that working upon this code—that "the end justifies the means"—murder itself can be excused and condoned. A man has only to say to himself: "I need this money for my wife and children, who ar starving," to justify the murder of someone else more fortunately situated than he.

Professional self-preservation raised to the last degree pushes the vivisector into defense of the indefensible. We cannot and should not forget that in defending vivisection the vivisector is fighting for his livelihood, for place, for power; for careers and prestige, even for his position as an acceptable citizen, because we hav become at last sufficiently evolvd to condemn *admitted* cruelty. Should a man confess to cruelty, even in vivisection, he would unquestionably suffer social ostracism. How, then, can a vivisector admit cruelty?

It is true that before the English Commission for Inquiry into Vivisection, some eminent vivisectors now living made frightful admissions that when vivisecting they had no consideration for the animals whatsoever; that they never thot of the pain they wer inflicting, nor that the animal had any rights they wer bound to consider; in short, no appreciation of the necessity for justis or mercy disturbd either consciousness or conscience. But since then these men and their admissions hav been held up to such public reproach that other vivisectors hav become more cautious. IT IS OWING TO THE ADVANCEMENT OF THE HUMANITARIAN MOVEMENT THAT THE PUBLIC ATTITUDE OF THE VIVISECTOR IS NOW ENTIRELY CHANGED. He cries: "Behold in me a

merciful man! I never commit cruelty, nor hav I ever seen any in vivisection. We ar impeccably humane!"

This crawling to cover, this reversal alone, demonstrates forcibly how strong the pressure of public opinion is, *and brings clearly before the mind the weight of the duty devolving upon each one of us to do our share in upholding and spredding the enlightend gospel of humanitarianism.* Let this be an encouragement to all; it means a very great deal.

Vivisection, then, as a worthy practis being on trial before the great tribunal of the public, the defense must base itself first, last, and all the time, upon a denial of its horrors, for humanity, because of its trend toward a perfect altruism, could not and would not permit them to continue wer it not deceivd regarding the agonies and abuses which ar attendant upon this cult, and which indissolubly accompany it. That these horrors ar stil perpetrated we find from the perusal of the printed reports from vivisecting laboratories. The literature of medical libraries is ful of convincing evidence as to the extremity to which vivisection is carried at the present day.

Not all medical men ar vivisectors, it is true, nor do they all believe in the theories and fads of the vivisecting world, but so long as they do not individually come out and fearlessly announce their faith in other methods; so long as they do not organize and collectivly declare for other lines of investigation; so long as they do not publicly denounce the cruelties of vivisection and the dangers of its outgrowths—serums and vaccines—just so long must they be held morally responsible for the crimes of vivisection and for the condition of the public, which is misled and imposed upon as to the benefits (!) it may secure from the serums and vaccines deployd so unremittingly before its eyes; and it is grossly left in ignorance as to the imminent and grave dangers attendant upon the use of these extracts, prepared from the poisons secured from artificially diseasd animals. *It is no secret that millions of dollars ar invested in these serum-vaccine plants, which ar purely commercial propositions and push their wares as do other manufacturing businesses; besides which, we ar credibly informd that the medical profession is largely represented among their stockholders.*

Space forbids taking up the statistical side of the claims for diftheria anti-toxin; spinal meningitis serum; Haffkine's plague vaccine, etc., etc., but the evidence is more than suffi-

cient to bid us beware of permitting our blood to be vitiated by the injection into it of these filthy and poisonous substances.

Herbert Spencer tels us that, once the integrity of the blood has been affected, it is impossible to tel how far-reaching the effect might be, and that, altho at the moment one might apparently escape evil results, years later other serious diseases might develop in consequence of the weakend and changed condition of the blood in which the poison has been all that time latent.

I would like to hav us all realize that the way of the vivisector is not the royal road to helth; that there ar other roads more fair, more wholesome, more safe, and more sane than that thru the "fetid entrails of animals," or than that thru their groans and cries and sufferings.

The fact that more than 2,000 years of vivisection hav left vivisectionists with empty hands, is one of the stanchest arguments against the practis. Claiming for vivisection an exactness and certainty equald by nothing else, it is significant that so little—if anything—has been rencht from the long-drawn-out orgies of cruel experiment upon animals during the slow passing of the centuries.

Besides this—even say we ar willing to accept the sacrifice of the animals with torture and agony for our sakes—how about the admission which has been made by vivisectors repeatedly that the final experiment must be made on man?

I wil cite some cases of human vivisection which hav been written up by the doctors themselvs:

In the Archives of Internal Medicin, Dec. 15, 1908, we lern of 160 children, some of them infants from four weeks to five months old, experimented upon in St. Vincent's Home, Philadelphia; the eyesight of several of these children was severely injured—one of them permanently. Besides this, all the children sufferd greatly, and they would sit around in dark corners, with an acrid liquid running from their eyes which was powerful enuf to burn their cheeks. The colord pictures illustrating the medical article referd to ar sufficient to silence the most doubting Thomas.

In the Archives of Pediatrics, Jan., 1909, another wholesale instance is described, where one thousand tuberculin tests wer made at the Babies' Hospital upon ward patients, the majority of which wer under two years of age.

In "Some Practical Points in the Use of My Vaccine, etc." 1913, we lern that the doctor has "experimented upon a material of nearly five thousand cases treated," etc.

In the Journal Experimental Medicin, Dec., 1911, it tels of children in the Rockefeller Institute inoculated with the syfilitic culture, "luetin." Not only wer the children of that hospital utilized for experiment, but the physicians of a dozen or more hospitals of New York and vicinity contributed their helpless patients for experimentation as might be seen fit.

In view of these startling examples, to which there might be added many, many others, equally and more atrocious, human vivisection may be considerd fully establisht and must be taken as a matter of course so long as we accept and defend animal vivisection. The one is the logical outgrowth of the other, and you may be the next victim at the hands of your own physician. Confirmation of the strong desire felt by vivisectors to hav human beings to vivisect, is the bold demand that criminals shal be handed over to serv as vivisecting material, or, as the Germans express it, "as beasts for reserch."

Do we really wish to nurture and harbor a cult which has within itself such dire and dredful possibilities?

The real hart of the question is the morality of it—can a man pursue an occupation, cruel *per se,* and at the same time be moral and humane? Can he possibly escape the hardening effects of his daily work? Is he not inevitably doomd to the degradation of cruelty, and thus become a menace to the body politic? We must remember that a brilliant intellect does not necessarily bring in its train high ethics nor kindly instincts. Neither is the polish of education any garantee of impeccability—*au contraire,* it is often deliberately assumed or cultivated with malis prepense.

That we should admit vivisection as part of the World's Work, and abov all that it should be a part of our education in the scools, would seem to be a dangerous instillation into the minds of adults, young people and children of influences endangering those qualities of kindness and mercy which it has been our boast and pride to call the highest achievement of our civilization.

Dr. Laurent, an eminent physician of Paris, and antivivisectionist, makes a convincing showing of the hideous cruelty we ar nursing in our communities. He says: "Fysio-

logical laboratories ar chambers of torture only, the experiments being veritable acts of barbarity."

Now, please pay particular attention to his next paragraph. It is replete with the exact logic of filosofical comparison:

"During past ages one encounterd superior types of humanity, advanst beyond their epoc, dreaming alredy of fraternity and of goodness; yet, *per contra,* there stil exist today specimens of humanity belonging to the savage and barbarous epocs. There ar now actually members of our society primitiv beings, who ar retarded in moral development and who preserv the instincts of rapine and murder, like the *cambrioleurs,* the assassins and the vivisectors.

"What can we lern from the experiments of a Naut, pouring into the stomac of rabbits water heated to a temperature of 60 to 120 degrees Centigrade; or of a Wertheim, soaking his dogs in boiling oil or essence of turpentine, and to which he sets fire; or of a Paschutin, or of a Peterman, skinning or flaying living dogs?

"Of what use to place animals in water heated gradually to the boiling point until they die; to cook a living cat in a stove?" (In our Offis, 456 Fourth Ave., New York, one of these furnaces is on exhibition.)

Here is another illuminating paragraf:

"Animals ar torturd—not for science, but to atone for the imbecility of their tormentors. The brains of their inquisitors lack those cels that could apprehend the processes of life, the cause and meaning of diseases; and because the inquisitor is fysiologically blind, def and dum as the result of such torture, it must go on, forsooth, until his imbecile brain is furnisht with the apparatus of discovery, which wil not be in a thousand years."

Piragoff makes this astounding, involuntary exclamation: "One day, as I remember, *this indifference to the agony of animals undergoing vivisection, struck me with such force* that, with my nife stil in my hand I involuntarily exclaimd, turning to the comrade who was assisting me: 'Why, at this rate, we might cut a man's throat.' "

While, as stated in the beginning of our starting point, the trend of our highest impulses is towards humanitarianism, it is, as yet, only a trend; the curv of life is towards this holy goal, but we ar not yet there by any means, and many there ar who do not see the beauty nor the necessity of striving thereto.

An English writer, whose name escapes me, has said: "Man is essentially a beast of prey, held in check by the wil of society, by the restraint of law. When these restraints ar removed, the hel within the human hart blazes brightly." This is a severe indictment, but it givs us food for much thot when we reflect that it was man's passion for cruelty which alone had power to debase religion—God's message of mercy and comfort to His children—until it became a by-word for insatiable fiendishness to man, all done under the cloak of "Religion"—"for the benefit of mankind;" now, having painfully emerged from that fase of cruelty, declaring it to hav been utterly inhuman and wrong we yet hav its parallel among us today in the same passion of cutting and slashing the lower animals, all done under the cloak of "Science"—"for the benefit of mankind!"

Does human life need the inquisition?

The Bishop of Durham profoundly says: " . . . I find it absolutely inconceivable that He should hav so arranged the avenues of knowledge that we can attain to truths which it is His wil that we should master only thru the unutterable agonies of beings who trust in us. . . ."

A backward glance from the Inquisition down thru prison, asylum, and other kindred cruelties, shows us that the *opportunity* for cruelty lets the fuming monster loose and nourishes it. Secrecy and power hav been large factors in our worst cruelties, and that is the condition which exists in the vivisectoriums of the day. The vivisections ar done in secret, behind seald doors, where the vivisector is all powerful. We cannot hope to change aut until a strong, noble altruism of public sentiment develops and demands the complete destruction of all secrecy and secures for itself ful publicity in all vivisecting laboratories.

The indictment of five professors of the University of Pennsylvania for cruelty to dogs (one form of which was dropping them from a height in order to break their backs), shows to what depths of passionate, intense cruelty, Professors of the Science of Medicin can descend.

An eminent physician of Munich, now in New York, has recently said: "Personally, I hartily endorse the words of Dr. Hoggan, (a pupil of Claude Bernard), who says in a pamflet: 'After having related what I saw, it is not necessary for me to ad . . . that I am willing to let not

only Science, but with it the entire human race, perish, rather than use such means to save it.' "

"This wild beast of vivisection that has gorged itself on millions of vicitims, is not to be tamed by mere entreaty," and it is the duty of all who see the light even faintly to array themselvs in the ranks of the anti-vivisectionists, so that we may, quickly indeed, by our numbers and power, make the crimes of vivisection a thing of the past.

The only thing that makes a human being "worth while" is the development of his ethical side. Take away our small achievements in this direction and nothing is left but caos. Losing our moral, ethical guiding star, what would be the end?

Ruskin says: "He who is not activly kind is cruel." What does this mean? It means we cannot be kind and compassionate and pursue a do-nothing policy. Negativ kindness is not kindness. "He who is not for me is against me." We cannot comfortably close our eyes and, because we ar not activly unkind, receive the approval of our conscience. We must do something for the cause of pity and compassion, if we would escape the odium of cruelty. The mere fact that what we, as human beings, fail to do for the sub-human beings can never be done, should be a call to every feeling of decency within us, prompting us to action that wil quickly right at least this one wrong, which is such a pitiful one, showing in the sad or frightend eyes of our patient, lowly, undevelopt kindred.

We ar on our upward way, trending slowly but surely toward a broad and perfect humaneness, and the wonderful fact of the unity of all life shows the necessity for ourselvs of a sense of moral obligation to all sentient life, and that it is for our own eventual welfare. We recognize that what we do that is wrong to the animal is wrong to ourselvs, and that we ar degraded and debased by cruelty; that we must consider the sub-human in a humane, kind, just way, and that by this consideration we ad to our own moral and spiritual development, which all admit is the purpose, the reason, of our existence.

THE GERM THEORY

It is said that if you want to make a person your enemy, speak against their religion or politics, or any belief that was inculcated in them when young. This is truly ignorance. What professional people, as wel as others, should seek is the TRUTH and not superstitious ideas or dogmas.

If the "germ theory" wer born in the hotbed of "Kultur," it is no reason why free-thinking people should not look at the matter from all sides. The very fact that its birth was in the greenhouse of "Kultur" makes the theory all the more suspicious. (I say this advizedly.)

As all my readers know, Rudolf Virchow, a German pathologist who was born in 1821 and died in 1902, was the founder of celular pathology. A pupil of his told me "with his own lips" that Virchow told him personally not long before he died that he feard he had made a great mistake in promulgating the theory that the germs *caused* the disease rather than that germs sought their natural habitat.

I askt this pupil of Virchow's (who is a wel known medical author) why he did not publish this so the medical profession as wel as the world could know that Virchow, when too late, had discoverd that his hypothesis was wrong. He said that he would not dare do it because of his position in the medical profession and because it would kil the sale of books of which he was the author. He said, however, that inasmuch as I was independent and not bound down by any cult or creed, he wisht I would—without mentioning his name—let these facts be known.

This is an example of the fear among scientists to contradict popular belief. Of course it is easier to go with the tide, but the way of least resistance is not necessarily the correct way to truth.

Personally I do not know whether germs cause the disease or not, but I am sure that we hav proof enuf to show that *all* so-cald germ diseases ar not *caused* by germs; and

if we wer as liable to disease from germs as the German scientists would hav us think, none of us would be alive after we wer a year old.

If we ar to take *macro*scopical knowledge as a guide insted of *micro*scopical knowledge, germs ar not the *cause* of disease, but the *consequence* of disease. A very good example is the stagnant pool. Mosquitoes do not make that stagnant pool, but the mosquitoes know from instinct that that is a good place to lay their egs, and therefore they make stagnant pools their favorit breeding places. Now, if we could not see these mosquitoes without a microscope, the German scientists might tel us that those mosquitoes made the stagnant water, but inasmuch as we can see with our naked eyes without having some German scientist interpret the findings for us, we *know* that mosquitoes ar a *consequence* of the stagnant water, and *not the cause*.

We could go on indefinitly finding illustrations from the *macro*scopic world to giv a very good impetus to the theory which seems natural—that germs of all kinds ar floating about us continually and they find the soil best suited for their growth.

We know that in vegetable life certain soil is conduciv to the growth of certain plants and inimical to the growth of certain others. We would not think of saying that the plants made the soil, but on the contrary that the soil made the plants grow.

If certain plants grow in certain soil long enuf, that soil wil become changed so that some other plant, which at first would hav died there wil now grow. *Is this not a very apt analogy to many diseases?*

If, for example the person is sick and the micro-organism which is concomitant with influenza, for example, takes a strong hold, cannot that condition make the body susceptible to something that appears to be even worse, that is tuberculosis?

Shal we say the tubercle bacilli cause the disease or that the tubercle bacilli, which ar floating about us, found a good habitat after the animal body had been properly prepared by the influenza condition?

You wil say that we ar opposing all "scientific proof" when we dare even intimate that the German scientists' germs do not cause disease. Some wil say, "What about Koch's law"—the "law" of another German scientist. I think that as years go by we wil find that many of these

theories ar wrongly based. I believe that if a given germ is artificially planted in an animal, it is carrying with it certain toxins that wil make the soil suitable for it; but I do not believe that we hav proof that these germs wil *per se* produce the disease.

When you plant disease germs into an animal, you ar carrying with it toxins that wil reduce that animal's resistance, and in so doing you ar preparing the soil for that given germ. My hypothesis may be entirely wrong, but how can we account for the fact that with the tubercle bacilli all about us, one person wil hav the disease while ten others in the same family wil not hav it? Of course the soil must be prepared in that one or the germ could not grow there. More than one person is thinking along these lines.

In Canada the feeling is so bitter against Germany that the "allopathic" doctors ar even attacking the "germ theory." The following is from the Canada Lancet of June 1916, and inasmuch as the Lancet is "ethical," "standard," and the "oldest medical journal in the Dominion," this is worthy of attention:

The Germans ar largely responsible for two widely accepted theories, viz:

1st. That their army is invincible.

2nd. That disease is caused by germs.

Both theories hav been challenged by Canadians. The reasons for questioning the germ theory ar mainly three, viz.:

1st. The divergent views of bacteriologists as to which germ caused the disease.

2nd. The stronger claim of the bio-chemic theory.

3rd. The absence of germs at the onset of disease (as the following sample cases show),

(a) A man crossing a river broke thru the ice, was rescued, later became il, and the doctor, fearing neumonia, tested for neumo-cocci—there wer none present. When the neumonia developt they appeard.

(b) After an oyster supper some men had cramps and diarrea, followd by tyfoid fever—no Eberth bacilli wer present in the first stools but wer present later.

(c) Hurrying, a girl arrived at her shop swetting; as the shop was cold, she became very chilly; next day complaind of a sore throat, but no Klebs-Loffler bacilli wer found. Later, when a diftheretic patch appeard, the bacilli wer present.

Here in each case the bacilli *followd* the onset of the disease.

Believing that the abov germs wer the result and not the cause of the diseases, tests of the germs of diftheria, tyfoid and neumonia wer made.

The first test was whether the Klebs-Loffler bacilli would cause diftheria, and about 50,000 wer swallowd without any result; later 100,000, 500,000 and a million more wer swallowd, and in no case did they cause any il-effect.

The second series of tests was to decide whether the Eberth bacillus would cause tyfoid, but each test was negativ; even when millions wer swallowd. The third series of tests showd that one could swallow a million (and over) neumo-cocci without causing neumonia, or any disturbance.

The investigations coverd about two years and forty-five (45) different tests wer made giving an average of fifteen tests each. I personally tested each germ (culture) before allowing the others to do so, and six persons (3 male, 3 female) knowingly took part in the tests and in no case did any symptoms of the disease follow.

The germs wer swallowd in each case, and wer given in milk, water, bred, cheese, meat, hed-cheese, fish, and apples—also tested on the tung.

Most of the cultures wer grown by myself—some from stock tubes furnisht by Parke, Davis & Co., and one tube furnisht by the Toronto Board of Helth thru one of their bacteriologists.

As the tests wer carefully made, they prove that there is not the danger from germs that bacteriologists claim. They also may stimulate other Canadians to undertake further experimental work, for the actual test on man decides the truth of the theory.

JNO. B. FRASER, M.D., C.M.
414 Shelbourne St., Toronto, Canada.

MORE FACTS REGARDING GERMS

The Open Door Publishing Co. of 456 Fourth Ave., New York City, has recently issued under the auspices of the New York Anti-Vivisection Society the following article from the pen of John B. Fraser, M.D., C.M., of Toronto, Canada.

From the abov, it wil be seen that Dr. Fraser is a biochemic physician. He presents many facts concerning the

germ theory of disease and its opposit, the bio-chemic theory of disease causation.

It is refreshing to see that a physician of Dr. Fraser's reputation and standing has the courage to come out and say what he thinks, whether it is pleasing to the "ruling element" or not. Sometimes what is the "ruling element" today is only a "scrap of paper" tomorrow.

Many scientists hav found that as the disease approaches a fatal termination the number of germs decreases. Therefore the worse the disease, the fewer the germs.

This whole controversy between the germ-fobiac and the bio-chemist is leading toward one great goal—that helth offisers should not be "men lerned in medicin and surgery" but should be civil engineers or even plummers with ordinary horse sense. *Sanitation* and right living prevent diseases more than anything else, and the sooner the physicians wake up to this, the sooner they wil be in line with the education that is now going on in opposition to the medical lobbyists. This education the public is absorbing and it is only a question of time when they wil throw the medical lobbyists out and wil enact laws along the lines of common sense and natural methods.

When the germ theorist asserts that neumonia, tuberculosis, diftheria, tyfoid fever and meningitis ar causd by germs, and the bio-chemic theorist declares that germs hav nothing to do with the *causation* of the abov named diseases, then it is time for citizens to examin the foundation of each theory, and support the one which appeals more strongly to their hard, common sense.

The study and classification of germs belong to the science of bacteriology, and as this science was placed on a practical basis only about the year 1880, it is in age only an infant with an infant's vagaries and illusions. Analytical chemistry is a more exact science than bacteriology; its history extends over centuries. Dr. Fraser's paper follows:

Foundation of the Germ Theory

"And the rain descended, and the floods came, and the winds blew, and beat upon the house that was founded on sand, and it fel, and great was the fall thereof."—The Book.

The two main points upon which the Germ Theory is founded ar: (1) the presence of different germs with different diseases; (2) that disease follows the hypodermic

injection of germs beneath the skin of all animals. (Some tests hav been made on human beings, but, as the germs wer not used scientifically, the result was not conclusiv.)

If you ask when the germs first appear, no anser is given.

If you ask the Germ Theorist to point out the relation between injecting germs in small animals and giving human beings the same germs in food or drink, they hav to admit that these ar two distinct procedures with practically no relationship.

If you examin the standard works on bacteriology you find no positiv proofs given, that germs, if taken in food or drink, ar harmful.

If you point out the cruelties inflicted upon dum animals during their experiments, the reply is that the end justifies the means.

The assumption that because germs ar found with disease they ar the *cause* of it, and that if injected germs wil cause disease, inhaled or ingested germs wil do the same, is surely a "foundation of sand."

Foundation of the Bio-Chemic Theory

"And the rain descended, and the floods came, and the winds blew and beat upon that house, but it fel not, for it was founded upon a rock."—The Book.

The first point for the Bio-Chemic Theorists to decide was whether the germs appeard *before or after* the onset of the disease. This was a rather difficult task, as our professional bacteriologists ar not cald until after the attending physician sees the case, and the latter is not cald until after the disease shows itself, when it is usually too late to make a fair test; but a long, careful study of erly cases, especially in neumonia, tyfoid, and diftheria, where the appearance of the germs is so often delayd, showd that the germ *followd* the onset of disease, and consequently could not be the cause of it. My own observations coverd a period of over three years. Many other careful observers hav investigated this point, and today there is a mass of evidence that cannot be broken down that *the germs ar the product and not the cause of disease.*

As the Germ Theorists strongly opposed this pivotal point—claiming that the germs wer present but undiscoverd

—their argument was met by destroying all uncertainty and dealing with solid facts that they could not deny.

Bearing in mind that germs ar the *product* of disease, and thus harmless, the Bio-Chemic Theorists of Toronto carried out the following experiments:

Tyfoid Germs

In testing tyfoid germs forty-five (45) experiments wer made in which water, milk, bred, cheese, meat, fish, potatoes, hedcheese, butter, porridge, etc., wer infected with millions of fresh, vigorous tyfoid germs; this food containing the germs was used in the ordinary way; and, as the Bio-Chemics expected, there was not a single instance of any sign of tyfoid. Here we hav 45 facts—not assumptions—to bild on.

Neumonia Germs

In this series of nineteen (19) experiments, milk, water and food wer infected with millions of neumonia germs, and altho no precautions wer taken to prevent the disease, no sign of the disease developt.

Diftheria Germs

A total of forty experiments wer made with germs of diftheria, in which they wer not only taken in water, milk, bred, porridge, potatoes, cheese, butter, etc., but other millions of germs wer swabd in the nose and throat, and every facility given them to develop, but in spite of all efforts they refused to develop, altho they would grow rapidly on nutrient agar. These tests wer made scientifically and part of the germs wer grown from stock tubes furnisht by one of the best known laboratories in North America. These ar facts—not opinions.

Tuberculosis Germs

In this series of tests nineteen experiments wer made; special attention was paid to thoroly infect milk, water, bred, meat, potatoes, etc., with millions of germs, fresh and vigorous, but in spite of every effort to get them to develop, they wer positivly inert. The germs used wer *human* (not bovin) tubercle-bacilli germs.

Meningitis Germs

As these ar the dredded germs supposed by some to cause infantile paralysis, and believd to germinate in the nasal mucous membrane, special pains wer taken to infect nostrils and throat with fresh colonies of germs; they wer swept over the turbinated bones, pusht into sinuses, swabd over the floor of the nostrils, rubd on the tonsils, placed beneath the tung, taken in milk, water and food; but in spite of coaxing, coddling and urging, they refused to produce a solitary sign of meningitis in the eleven tests made.

Ten experiments wer made with germs, viz.: Tyfoid and neumonia, tyfoid and tuberculosis, diftheria and meningitis, tyfoid and meningitis, diftheria and neumonia, etc., but all faild to produce any effect.

Germs Used in Experiments

For the benefit of bateriologists we enumerate the germs used in the tests mentiond: Eberth bacilli, Klebs Loeffler bacilli, tubercle bacilli (human), diplococcus neumoniæ, and diplococcus intracellularis meningitidis—all wel known to bacteriologists.

Chemical Causes of Disease

The experience of ages has shown that many diseases hav a chemical (not bacterial) origin; as examples, tainted meat or oysters contain a chemical poison that wil cause tyfoid; the inhalation of clorin or bromin gas wil cause bronchitis and neumonia—the latter may also be causd by the chemical effect of exposure to cold; sunstroke by the chemical effect of heat; led poisoning by working in led; stonecutters or miners thisis by the inhalation of coal or mineral particles; rus poisoning by coming in contact with poison ivy; cirrosis of the liver thru abuse of alcoholic liquors; colic from eating green apples or unsuitable food in fact it is the violation of *chemical* laws that causes most of our intestinal diseases.

Summary of Facts

1. That germs follow the onset of disease.
2. That many diseases hav a chemical origin.

3. That germs may be inhaled or ingested without harm.

Truly a rock foundation.

Different View Points

From the Germ Theorist viewpoint it is permissible to dump barrels of an irritant poison (bleaching powder) into drinking water; from the Bio-Chemic Theorist viewpoint that act is maniacal.

From the Germ Theorist viewpoint it is reasonable to forbid milkmen to sel or deliver natural milk; from the Bio-Chemic Theorist viewpoint that act is criminal.

From the Germ Theorist viewpoint it is advizable to quarantine citizens if found carrying certain germs—thousands of citizens carry germs unknowingly; from the Bio-Chemic Theorist standpoint it is an unwarranted robbery of our citizens' liberty.

The Citizens' Mistakes

Many citizens believe that clorination protects them from tyfoid, but the facts that Toronto with clorinated water has an average deth rate from tyfoid twice that of London, England, with natural water, and that in 1916 we had three times more deths from tyfoid than in 1915 show their error.

Again, while clorination does not save us from tyfoid, being an irritant to the mucous membrane, it favors nefritis and Bright's disease. Toronto's record is suggestiv: In 1912 Toronto lost 14 citizens from nefritis (inflammation of kidneys) and Bright's disease; during 1913-14 the deths increast, and in 1915 Toronto lost 218 persons from these diseases—an increase of over thirty per cent.

Many citizens believe that half-cookt, pasteurized milk is good, but the facts that Toronto's infantile deth rate is twenty-nine per cent. higher than London, England, and twice as great as rural Ontario's (both prefer using natural milk); that the deth rate in Toronto Sick Children's Hospital, in the Infants' Home on St. Mary street, and R. C. Infants' Home on Power street, increast when they stopt using natural milk, all show clearly that the insane desire to tamper with normal milk has cost Toronto many infantile lives.

Again, when citizens of whatever country realize that they may be quarantined simply because they carry some

harmless germs, it is time for them to organize and fight for their personal rights. It is a battle between principles; a fight between later scientific facts and past theories; a question that must be fought out.

The Bio-Chemic Theory appeals to humane persons, for where thousands of small animals hav sufferd deth thru Germ Theorists' experiments, the experiments here mentiond cost neither life nor helth to man nor animal.*

*(Dr. Frazer formally issued a challenge open to everyone—helth boards or physicians—to test the danger of germs publicly. No conditions except that the experiments should be done openly, yet so far as I can lern, no one has had the courage to accept the challenge. G.S.W.)

THE THEORY OF VACCINATION. IS IT A MYTH?

As I hav previously said,—what we want to know is the TRUTH. We do not want to side with this one or that one because they ar in the majority, but we want to look at TRUTH as TRUTH.

Because some so-cald "civilized" countries ar legalizing rape is no foundation for saying that rapine is right. Because a state legalizes a fault does not make that fault any less a fault. In these turbulent times, unless we gard ourselvs we ar liable to be led into the belief that anything is right that is so declared by might. The whole world is fighting against the theory that "might makes right," and is fighting for a *democracy*.

As I understand it, a democracy is a country governd by laws made by the *people*—not by any set or clique, but by the *people as a whole*.

Years ago I happend to be in a community where there was a great smallpox scare because right in the house where I was living was a case of "black smallpox." No one dared to go near the patient's room and he was left in an isolated part of the house to die. Some of my own family volunteerd to take care of the unfortunate victim and as at that time I was studying medicin, I also volunteerd to do my part as "a physician." I wel remember that when I went into the village I was stoned by persons whom I had never even seen before. They did it because they wanted to drive me off the streets, altho I was in town on an errand of mercy to get something to help this victim of smallpox. Fences wer bilt on the roads going by our house and a new road was temporarily made thru adjoining fields. Why was this great commotion? Simply because of the *smallpox scare*. I had been vaccinated about ten years before but some in the quarantined place had never been vaccinated.

I askt an old woodsman what was best to do. He said to spred half a bushel of cut-up onions thruout the house, hav everyone in the house eat all the onions they could, and keep the bowels open. He said he had been thru smallpox scares a good many times but he had never taken the disease and that we need not be afraid. This case of smallpox recoverd and no one took the disease.

This made a profound impression upon my mind, and I hav made it a point ever since to talk against vaccination whenever possible. Personally I hav never believd that vaccination prevents smallpox. *I believe it is sanitation and isolation that prevents it.* I hav seen perfectly wel and helthy children vaccinated and within three weeks hav herd of their deth. Do you suppose that the cause of deth was put down as vaccination? NEVER. It was put down as septicemia, lockjaw, diftheria, and various other causes. Why is this? It is because the medical profession, like other professions, ar afraid to say aut against a theory bilt up in their own profession.

Suppose one of your children, compeld because of State medicin to be vaccinated, should die from the effects of the vaccination? What would you do in the matter? Would you not feel like rising up and crushing the monster which has so thoroly impregnated the politics of a state and nation as to turn what should be a democracy into an OLIGARCHY? *Nothing but an oligarchy can a body making such rules and regulations be cald.*

No one has a right to compel you to mutilate your child any more than they hav a right to rape your child. It is body violation in either instance.—IT IS ASSAULT!

Within the past two years I knew of the passengers of a ship being quarantined and all *forcibly* vaccinated because of a suspected case of smallpox on board. A relativ of this supposed smallpox victim has recently told me that she herself took care of the young man who was her nefew. She said his ilness was caused by an overdose of cream of tartar given him to prevent seasickness. Having plenty of means, they brot legal action to hav the young man taken out of quarantine, and his case was diagnosed by independent, honest physicians, as a *drug eruption.* Do you suppose the newspapers publisht the facts regarding this case? No. The facts wer never publisht, and to this day the records show that a case of smallpox was on board this vessel and the passengers wer all forcibly vaccinated.

There was a time when belief in witches was supposed to be wel founded, but now we say, those who believd in witches wer insane. I would like to know how witchcraft belief is any worse than this "smallpox scare" belief. I believe the time wil come when this smallpox scare wil be lookt upon with as much horror as witchcraft is now.

One pertinent question often is askt: "Why do officials so garble statistics regarding smallpox among unvaccinated or vaccinated people?" When there was an outbreak of smallpox on one of our battleships at Guantanamo Harbor a few years ago when some 25 or 30 of our *vaccinated* navy men had smallpox and five or six died, was a report sent out that *vaccinated* men had smallpox? Not by the surgeon general of the navy at least. He did not even giv out a statement regarding this affair. If it is TRUTH we ar after, then why this evasion?

Another question, "When the question of compulsory vaccination by the state comes up in our legislatures, why do certain manufacturers of vaccines hav lobbyists always present?" This is food for thot.

Some wil say that all the bad reports regarding vaccination wer of "years ago" when the tecnic for vaccination was not as perfect as it is today. This is not true. *People ar dying from the effects of vaccination today the same as of old.* And what is worse than deth—*I believe the prevalence of so many conditions such as tuberculosis, cancer, etc., is directly or indirectly caused by the poisoning of the system by vaccination.*

I believe the rank and file of physicians want to do the right thing and be honest with their patients and the community, but this *superstition of vaccination* has been so drild into their heds that they cannot see or reason correctly. Because they garble and falsify the deth certificates of victims dying from venereal diseases, they go a step farther and think it is perfectly right to do the same with deths caused by vaccination because, as they say, "to giv out a report that a person died of vaccination would only be predisposing people against the State-Medicin laws.

This is "Kultur" right in our very midst.

Not long ago I saw a report sent our from one of our principle news centers to this effect that "The leading physicians and surgeons of the land, when interviewd, say that no untoward results hav ever followd vaccination either in

this or any other country of the world." Why this monstrous falsehood?

That I might hav authentic information to giv my readers regarding this false notion that has been bred in us from childhood regarding vaccination, I askt Mrs. Lora C. Little, a wel-known writer and investigator on this subject, to giv me some facts. Mrs. Little lost an only child by vaccination and she has spent many years in trying to educate the people against this superstition. I hope this article wil be red by every physician in the land.

Now that woman suffrage is going to be a reality, I hope the women of the land wil take it into their hands to see that laws ar not enacted under the guise of *"state medicin"* that wil injure, mutilate, and defile their children.

The following is Mrs. Little's contribution:

Whenever the vaccinationist can be brot to face the issue squarely, there is hope. His usual tactics ar about as follows:

For instance, you mention Japan, giving the facts from official records, and tho you prove your case it means nothing to him—nothing more than a strategic retreat. He has alredy fled to the Philippines, seeking not information but sanctuary. You riddle the Philippines argument, and he bethinks him of Germany. Show him the smallpox that has ravaged Germany in her last two wars, and he climes out of that trench and puts up the argument of the American Army. Giv him the smallpox deth rate of our Army in the Philippines and the War with Spain, and he drops the Army. Chase him from behind all his modern defenses, and quite undismayd he falls back on the argument of smallpox before and after Jenner. Patiently and painstakingly cover that ground and prove it indefensible, and he brings forth as a final clincher the "concensus of medical opinion!"

They all fetch up here eventually. And what is "medical opinion" founded upon but just these and similar bits of unreality—bulwarks so often shot to pieces nobody would think of seeking shelter behind them save a tradition-led blind man.

"The anti-vaccinationists hav knockt the bottom out of a grotesque superstition," pungently remarkt Dr. Charles Creighton when the truth had fully dawnd upon him.

They hav, but the doctors ar slow in finding it out. The trouble with them has been sufficiently indicated. In relation to this subject they hav wholly abandond the atti-

tude of scientific inquiry and taken the position of "defense at any cost." When they do not resort to the game of hide and seek just described, they get hot under the collar and refuse to discuss or consider the subject at all.

If this state of things continues much longer, with the anti-vaccinationists as activ as they ar, the medical profession wil become the laffing-stock of the world—the only class remaining sublimely oblivious of the egregious failure and prodigious disaster which vaccination has been to the human family.

Now to any candid believer in the thing, it would be perfectly obvious that a single distinct and indubitable failure of vaccination to protect any considerable community against severe and widespred smallpox, must reopen the whole question and call for a serching and critical analysis of all the data, or else prompt and unconditional surrender.

To such a mind, again, the spectacle of two equally vaccinated populations, one suffering hevily from smallpox thru a long period of years and the other in the same period comparativly immune, the conclusion must inevitably come that here is the clearest evidence of a determining factor other than vaccination.

Then let our sincere vaccinationist see the just mentiond fairly immune country in a short space of time placed under conditions of want and disorder by a terrible war and her wel-vaccinated people succum by the tens of thousands at a time to smallpox; then he could not avoid the conviction that it could not hav been vaccination that protected her before, else it would protect her now.

Next, let him observ a city of a quarter of a million, known to be more than 90 per cent. unvaccinated, and let him see that for ten years at a time the only case of smallpox appearing there is one imported from without, and he must admit there exists an effectiv preventiv of smallpox—and it is *NOT* vaccination.

The several instances just cited ar as authentic as they ar striking. The facts in these cases ar attested by officials who hav been—and perhaps from habit and self-interest stil ar—supporters of vaccination.

JAPAN

The history of smallpox in Japan, from the time vaccination and revaccination wer made compulsory, affords

positiv proof of the worthlessness of the operation. Japan's case is clear-cut and not open to doubt or quibble, because there has been no opposition in that country and therefore no obstacle in the way of carrying out the medical program once the government adopted it.

A leading vaccinationist, Dr. Jay Frank Schamberg of Philadelphia, gets around the difficulty caracteristically by ignoring the official figures and pointing to the fact that Japan continues to vaccinate. It is in the Ladies' Home Journal, June, 1910, under the hedding, "What Vaccination Has Really Done," that he says:

"They (the anti-vaccinationists) claim by a show of statistical tables that vaccination has been a failure in Japan and the Philippine Islands, but the Japanese and United States Governments, unfortunately for the critics, do not agree with them."

This is virtually a flat refusal on the part of Dr. Schamberg to consider the evidence, which it is a fair inference he dares not tackle.

The vaccination regulations of Japan ar described by Baron Kanehiro Takaki, formerly Director-General of the Medical Department of the Japanese Navy, as follows (London Lancet, 1906, p. 1441):

"There ar no anti-vaccinationists in Japan. Every child is vaccinated before it is six months old, revaccinated when entering scool at six years, again revaccinated at fourteen years of age when going to the middle scool, and the men ar revaccinated before entering the army, while a further revaccination is enforst if an outbreak of smallpox occurs."

This was the law from and after the year 1885, tho compulsory vaccination had been in effect since 1876. (Report of John Pitcairn, member Pennsylvania Vaccination Commission, p. 18.)

What has been the result?

Official statistics supplied by Baron Takaki show in the 20 years from 1886 to 1905 the total vaccinations performd number 91,351,407 upon an annual average population of 43,027,661. ("Both Sides of the Vaccination Question," by Pitcairn and Schamberg, p. 24.)

These figures, together with the vaccination regulations just quoted, made Japan the most vaccinated country in the world. She should, therefore, make the best showing

as regards smallpox, if there is anything in the claims made for vaccination.

On the contrary, for the 20 years 1889 to 1908, for which the figures ar available, Japan had more smallpox and a hevier smallpox mortality than any "civilized" country in the world in the same period. The cases numberd 171,500 or an annual average of 8,500, with 48,000 deths, a mortality of 28 per cent. (Official statistics supplied by S. Kubota, Director of the Sanitary Bureau of the Department of Home Affairs, Tokyo, quoted in "Both Sides of the Vaccination Question," p. 25).

Compare this deth rate with the smallpox deth rate before the time of Jenner in then unsanitary Britain. The average for those days, according to the best authorities, was about 17 per cent. (Final Report British Royal Commission on Vaccination, paragrafs 47, 52 and 53). So that vaccinated, revaccinated and re-revaccinated Japan exhibits a smallpox deth rate 64 per cent. higher than that of the prevaccination era.

The case against vaccination is proved. Its failure in Japan is establisht beyond dispute. And if it has faild in Japan, it is ridiculous to suppose it has prevented smallpox anywhere else.

Germany

Perhaps Germany ranks second to Japan in thoroness of vaccination. During the 20 years abov mentiond (1889 to 1908) in which Japan was ravaged by smallpox, Germany appears to hav been comparativly free from the disease. Since Japan if anything had the advantage with regard to vaccination, we must conclude it was some other element than vaccination which caused the difference in results.

What that element was wil appear if we review the history of smallpox in Germany for the seventy years and upward during which vaccination has been obligatory.

Taking Prussia first, in the year 1835 a Royal Ordinance was promulgated decreeing vaccination of all classes under penalty of fine and imprisonment for neglect. (Vaccination Inquirer Vol. 25, p. 241.)

In 1853, we find Sir John Simon, an English medical man and vaccinationist, describing Prussia's "protected" condition as follows:

"1. Every child required to be vaccinated before it is one year old. Parents who do not obey punisht if child takes smallpox.

"2. None ar (a) admitted to scool, or (b) to any public employment, or (c) allowd to marry, without a certificate of vaccination.

"3. Soldiers ar revaccinated on entry into the army.

"4. It is the duty of every parochial medical officer to vaccinate every child." (Pearce's Vital Statistics, 92.) (Dr. Pearce was for years Registrar General of England and is a recognized statistical authority.)

Dr. Seaton, Medical Officer to the Privy Council and Local Government Board, said in 1871 to the British Praliamentary Committee on Vaccination (Q. 5608): "I know Prussia is wel protected."

The Pall Mall Gazette, May 24, 1871, said:

"Prussia is the country where vaccination is more generally practist, the law making the precaution obligatory on every person, and the authorities conscientiously watching over its performance. As a natural result smallpox cases ar rare."

Thus we hav ample testimony to the fact that Prussia was in 1871, and had long been, a remarkably wel-vaccinated country, and at the beginning of that year was pointed to as a "country immunized against smallpox by vaccination."

The close of that year had a different story to tel. The smallpox epidemic that was sweeping Europe took a hevier toll from Prussia than from any other country, 69,839 citizens dying of the disease. This made a deth rate of 2,430 per million living. In Berlin the deth rate reacht the enormous figure of 6,150 per million living, more than twice that of notoriously less vaccinated London. (Pearce's Vital Statistics, 94 and 98.)

Of other German countries, Bavaria had an obligatory law from 1807; Nassau, "more or less obligatory" from 1808; Baden, from 1809; Wurtemberg, from 1818; Haumer, from 1821, etc.

In Bavaria in 1871 there wer 30,742 cases of smallpox, 29,429 of which wer in *vaccinated* persons.

In Cologne, 1872-3, there wer 2,282 cases, whose vaccinal condition was recorded, and 2,248 wer in vaccinated persons.

In Neuss from 1865 to 1873 there wer 247 cases of which the whole wer in vaccinated persons.

In Kreffeld in the same epidemic there wer 118 cases, 117 of which wer vaccinated.

In Wesel, 1870-73, there wer 523 cases of which 8 only (including 4 babies) wer unvaccinated.

(General Arthur Phelps in Vaccination Inquirer, Vol. 25, p. 240.)

In all Germany with the oldest vaccination laws in the world this epidemic kild 124,000 vaccinated and re-vaccinated citizens. ("Is Vaccination a Disastrous Delusion?" by Ernest McCormick, p. 25.) Also see "Vaccination and the State" by Arnold Lupton, M.P., p. 29; also "The Wonderful Century" by Alfred Russel Wallace, pp. 263-4-5.)

After the epidemic of 1871-3 a lesser outbreak occurd in Germany in 1880-82, when there wer 25,000 cases and 2,700 deths. (Testimony of Carlo Ruata, M.D., Professor of Materia Medica, University of Perugia, Italy, before the Pretor's Court, Perugia, July 31, 1912 and printed in "Vita e Malattie," Vol. 2, No. 29, Aug. 1912—English translation publisht by the National Anti-Vaccination Leag, London.)

Some figures regarding smallpox in Germany in more recent years ar the following by the British Registrar General, in which comparison is made between London and Berlin. They ar quoted in "Vaccination and the State" by Arnold Lupton, M.P., p. 28.

Deths	*London*	*Berlin*
1904	25	.....
1905	10	1
1906	.....	16
1907	.....	1
1908	.....	1
1909	2	1
1910	.....	6
1911	9	6
1912	1	4
	47	36

The population of London being 4,500,000, and that of Berlin 2,000,000 makes the deth rate for Berlin for the nine years 72 per cent. abov that of London.

Germany's story is not complete without mention of the smallpox that has appeard in that country since the beginning of the Great War. No official statements of course ar available, tho stories hav leakt out of epidemics in 1915 and 1916. In the spring of 1917, however, something more specific appeard. The press of this country carried news of a speech of Herr Hoffman in the Reichstag, in March, in which he stated there wer 30,000 cases of the disease in Northern Germany, the epidemic was spredding and the vaccination employd to check it was of no avail. The London Lancet of September 22, 1917, refers to smallpox having been epidemic in North Germany during the first seven months of that year, and the Lancet never makes any admissions about vaccination that can be avoided.

How, then, ar we to account for the varied experience of Germany, now with little smallpox for considerable stretches of time, and anon falling victim to epidemics; at one time enjoying a mild type of the disease and at others rithing under a scourge of the most virulent form? Vaccination as a factor having been eliminated by being constant thru fair times and foul, let us see what variation of other conditions could account for it.

In the first place must be noted the wel known fact that, conditions favoring, epidemics generally hav a way of recurring from time to time. Their temporary subsidence is apparently due to the *exhaustion of susceptible material,* and their return dependent upon a new supply of susceptibles.

A pregnant word in this connection may be found on page 256 of "The Wonderful Century" (Alfred Russel Wallace), where the author says:

"It (sanitation) is mainly a case of purity of the air, and consequently purification of the blood; and when we consider that breathing is the most vital and most continuous of all organic functions; that we must and do breathe every moment of our lives; that the air we breathe is taken into the lungs, one of the largest and most delicate organs of the body, and that the air so taken in acts directly upon the blood, and thus affects the whole organism, we see at once how vitally important it is that the air around us should be as free as possible from contamination, either by the breathing of other people, or by injurious gases or particles from decomposing organic matter, or by the germs of disease. Hence it happens that under our present terribly im-

perfect social arrangements the deth rate (other things being equal) is a function of the population per square mile, or perhaps more accurately of the proportion of town to rural populations."

And when a sufficient number of persons has acquired that kind and degree of blood impurity that invites smallpox, an epidemic of smallpox is certain to occur. Professor Wallace elsewhere refers to food as an important factor in promoting purity or impurity of blood, and this too is to be taken into account.

Defectiv sanitary arrangements wer caracteristic of Berlin and in great degree all Germany up to the conclusion of the Franco-Prussian War.

"In Berlin there was scarcely a house in the whole city that had not got its own privy in the back yard, open cesspools wer common over the whole place. The barracks for the soldiers wer nothing more nor less than filthy dens. The sewage of the city was emptied into the River Spree. What did the Germans do when they receivd the money as the indemnity from the French nation that they had conquerd? They took that money and devoted it to sanitary improvements; they brot good water into their cities, they adopted a new drainage system, and they bilt model barracks for their soldiers. They got rid of the miserable dens that infected their principal cities, and what was the consequence? Away went the smallpox, flying like the Philistines before the children of Israel. And hence it is that *sanitation* has done for Germany what thirty-five years of compulsory vaccination could not accomplish. Ever since the year 1871, right on to the year 1888, Germany spent no less than half a million of money (pounds sterling) every year in Berlin alone for sanitary improvements." (Walter R. Hadwen, M.D., "Vaccination Absurdities and Contradictions.")

General Arthur Phelps testifies similarly, after describing the epidemic of '71-'72, and further mentions improved methods of dealing with smallpox cases:

"About this time the French Milliards came in, and sanitation was invoked. Drainage, water supply, sewerage, slum clearing, etc., wer attended to. Professor Virchow inspired the Berlin municipality. The Spree which had become an open sewer was clensd and purified. The new vaccination law extended the term for vaccination from one to two years, thus somewhat alleviating the brutal tyranny

of the previous law. And where vaccination had ignominiously faild, sanitation succeded. A strict isolation law was past, with compulsory notification. Insted of aggregating smallpox in crowded hospitals, power was given to segregate cases in their own houses." ("For and Against Vaccination," p. 31.)

On the last point, Arnold Lupton, M.P., in "Vaccination and the State" remarks:

"There is, however, another explanation of the freedom of Germany from smallpox. Since the great epidemic of 1871-2 the Germans hav had drastic laws, efficiently carried out, for isolating smallpox patients, and in order to facilitate the isolation of smallpox patients from the rest of the community they hav paid the wages of a workman in whose family there was a smallpox case, so that he could stay at home. Similar care in other places has proved effectiv." And he ads, "The Germans also initiated great sanitary reforms in household arrangements and drainage."

Dr. Carlo Ruata, previously quoted, likewise states:

"The frightend Government thereupon made the isolation of smallpox patients compulsory, and subjected them to rigid surveillance, under most stringent and minute regulations, which wer stedfastly and compulsorily put into practis."

The cause of the latest outbreak of smallpox in Germany, the epidemic of 1917, is easily accounted for by the poor and insufficient food and inevitable failure of the strict sanitary regulations, due to a population hard prest and straining every nerv to keep up the necessary war industries.

An unknown writer summarizes the situation in Germany in 1917 as follows—commenting on the Associated Press dispatch referd to:

"Note the point that vaccination against it is proving futil. This is due to three facts: First, vaccination wil not prevent smallpox. Second, the sanitation of the country has fallen below the standard, because only women and old men hav the care of it, and they ar unable to keep the work up. Third, as Mr. Porter F. Cope of Philadelphia has suggested, the people of Germany hav been vaccinated so often their blood and tissues ar thoroly impregnated with smallpox, as the virus used has been of smallpox origin. The lowerd state of vitality brot about by starvation and other conditions consequent upon the war has enabled the stored-up smallpox to overcome the remaining vitality.

Quarantine and isolation ar unable to hold the epidemic in check because of the large number of unrecognized cases among the vaccinated."

Indeed, with the nation short of labor to carry on war industries, as it was, it was inevitable that quarantine and isolation must hav largely broken down.

As the foregoing and much more that might be quoted shows, vaccination has proved no less a distressing failure in Germany than in Japan. Nor ar indications wanting that the German people ar becoming aware of the fact. Opposition to vaccination reacht a culminating point when in the spring of 1914 a resolution was presented in the Reichstag calling for an investigation of the subject. But for the plunging of the nation into war, we should no doubt hav herd more of the matter before this.

The Philippines

The Philippines under American occupation hav been used as an argument by the vaccinationists. The remoteness of the Islands, together with the caracter of the population as a whole, and the fact that our information must come almost entirely from medical sources, with these sources under control of a semi-political organization—all these things hav contributed to make the experience of the Philippines a safe argument. But "murder wil out." To make up a vaccination dummy anywhere today that wil long pass muster as a live fact is beyond even *American Machiavellian Association* ingenuity. A few jabs with the anti-vaccination bayonet and the sawdust begins to leak.

Smallpox in the Islands prior to their taking over by the American authorities is said to hav caused an average of 6,000 deths a year. (Report of the Governor-General in 1907.) Since the United States took possession, it has been variously claimd—(a) that the disease has disappeard, (b) that the smallpox deths hav been practically nothing, (c) that there hav been no deths from smallpox. You pay your money and take your choice of stories. The point of the story always is that these marvels hav been accomplisht by vaccination.

Before adopting that theory it would be wel to scan such official records as ar available. The Third and Fourth Reports of the Philippine Commission, years 1902-3, wil

be found to shed light on the subject, with the following important information:

When the American occupation was complete it was found that the city of Manila containd about 20,000 dwellings, 10,000 of which wer nipa-houses—a species of thatcht shack. These nipa houses wer unprovided with proper drainage and as a result, during hevy rains, accumulations of filth and garbage floated out into the streets and wer deposited over the districts, spredding disease far and wide. Only 11 of the 10,000 nipa houses inspected wer provided with cans for the collection of garbage, and only five wer provided with water-closet arrangements. As each of these dwellings shelterd from 8 to 12 persons, it was impossible in 1902 successfully to enforce sanitary regulations. (See 3d Report, p. 328.) The "depositos" or stone vaults commonly found in Manila wer relics of the middle and "barbarous" ages, and in many of them the undisturbd collections of fecal matter of years wer found to exist (and this in the sweltering heat of the tropics). (See same Report, p. 330.) There was practically no drainage system in Manila, with the exception of open gutters which carried sewage.

All these conditions wer done away with by the American administration. Sewerage systems and improved water supply markt the progress of the American authority, and a rigorous clensing of unsanitary conditions generally.

Col. L. M. Maus, Commissioner of Public Helth for the Philippines, in his Official Report for the period ending July 31, 1902 (3d Report of the Philippine Commission, p. 309), says of the Islands: "Little or no attention was paid to sanitation. * * * The sanitary condition of the city of Manila, at the date of American invasion, resembled that of European cities in the 17th century."

The newly created Board of Helth of the Philippines past the most stringent regulations for the cleaning up of the city of Manila, as wel as for the sanitary improvement of the entire archipelago. Provisions wer made for the sanitary inspection of dwellings, for the lighting, ventilation and drainage of lodging-houses, and for the control of garbage and the disposal of all offal. Rigorous mesures for the abatement of nuisances and providing for the actual vacation of premises wer enacted and an elaborate system of quarantine, including sanitary gards, was put into effect.

To illustrate the thoroness with which communicable diseases hav been controld in the Philippines by isolation and other sanitary mesures, attention is cald to extracts from the Report of the Philippine Commission for 1903. In this Report (Part 2, p. 4) it is stated that the city of Manila "has been brot into a sanitary condition never approacht under the previous administration, and its deth rate so reduced as to compare favorably not only with that of other tropical cities, but even with that of many cities in the United States."

The same Report shows that the expenditures of the Board of Helth for the year ending August 31, 1903, wer considerable over $1,000,000. There wer 1,954,990 inspections and reinspections of houses; 241,806 houses wer cleand as a result of inspection; 1,196 houses wer whitewasht and painted; 7,336 houses wer disinfected; 82 houses wer condemd and removed; 11,256 cesspools and vaults wer cleand; 161,447 yards wer cleand; 1,757 yards wer repaird, repaved, etc.; and 5,479 sanitary orders wer complied with by householders.

That the Commissioner of Helth wel knew these wer the vital things is shown in his words on page 64 of the same Report: *"Improvement in helth conditions is permanent only while proper sanitary mesures ar being applied."*

The Helth Inspector of the Province of Tayabas reports (Part 2, p. 205) as to the town of San Narciso: "*Smallpox.*—None. Vaccination not thoro, owing to lack of virus."

The Helth Inspector of the Province of Ambos Camerines reports as to the town of Cabusan (Part 2, p. 208): "Streets and houses ar clean. Offal is carried to edge of town and burnd. * * * *Smallpox.*—No cases. No vaccination thus far."

Sojourners in the Philippines likewise offer interesting testimony. Miss Mary H. Fee went there as a scoolteacher in the erly days of American occupation and after five years' stay wrote a book, "A Woman's Impressions of the Philippines." In it she relates the following:

"In a nipa house between the two scoolhouses (at Capiz) the janitors had their quarters, and the arrangement was such that pupils leaving the room temporarily past thru it. One day one of the children casually remarkt that some one was sick in there with *viruela* (smallpox). I went in and found a child apparently in the worst stages

of confluent smallpox. Now in our own dear America this would hav ment almost hysteria. There would hav been hedlines an inch deep in the local papers, the scool would hav been closed for two weeks, a general vaccination furor would hav set in, and many mamas and little children would hav dreamd of confluent smallpox for weeks to come, But we did none of these things. We merely requested the authorities to remove the smallpox patient, and orderd the janitor to scrub the room with soap and water. Nobody quitted scool, nobody got the smallpox, and the whole thing was only an incident. I hav livd in towns with newspapers and in towns without them, and hav come to believe with Gilbert Chesterton that the newspaper is used chiefly for the suppression of truth, and I am inclined to ad, on my own account, for the propagation of hysteria."

Miss Fee tels of a colera outbreak in Capiz which caused the deth of 5,000 of its 25,000 inhabitants, remarking it was confined almost entirely to the poor. In another chapter she describes Fillipino etiquet in relation to the sick. She says:

"Some of their strictest observances ar in matters of sickness and deth. The sick ar immured in rooms from which as far as possible all light and air ar excluded. In a tropical climate where the breeze is almost indispensable for comfort, the reader may imagin the result. Then all their relativs, near and far, flock to see them; they crowd the apartment and insist on talking to the patient to keep him from becoming sad."

Joseph Earle Stevens, who spent two years in the Islands prior to our difficulty with Spain, has also publisht a book "Yesterdays in the Philippines," in which he remarks upon the utter absence of quarantine. "Nobody thinks anything about smallpox in Manila, and one ceases to notis it "in the tram cars and elsewhere."

Now if in Manila colera and the plague hav been banisht by sanitary mesures, merely by providing for pure air and pure water and the strict isolation of the contagions, so that the city compares favorably with many cities in the United States, as we ar offiically assured, then it is a most illogical presumption to say that smallpox was not reduced by the same means. If any there be who after reviewing the facts here presented continue to attribute the comparativ freedom of Manila and the Islands to vaccination, then

they ar respectfully requested to anser this question: *Why did vaccination not protect our troops in the Philippines?*

U. S. Army

According to the figures of the Surgeon-General of the Army there wer 737 cases of smallpox with 261 deths among our soldiers in the Philippines in the five years 1898-1902, a mortality of over 35 per cent., double that of the pre-vaccination period. Wer they vaccinated? Wel, rather! Referring to these very cases, Chief Surgeon Lippincott stated that "vaccinations and revaccinations many times repeated went on as systematically as the drils at a wel-regulated post." He added, "I believe I can say that no army was ever so carefully lookt after in the matter of vaccination as ours, and that the department commander, General Otis, fully alive to the necessity, did everything in his power to make our work possible and effectiv." (Extracts from a Paper on the Expedition to the Philippine Islands, May 27, 1898 to April 27, 1899, by Lieut-Col. Henry Lippincott, U. S. A., Chief Surgeon, Department of the Pacific and Eighth Army Corps, in the Philadelphia Medical Journal, April 14, 1900.)

Thus we see that "vaccination many times repeated" did not in those erly days in the Philippines protect our Army, therefore what folly to claim the vaccination of a portion of the nativ population has saved the entire population from smallpox! Could fanaticism go farther?

That the sanitary mesures initiated and establisht there ar sufficient to account for the improvement in relation to smallpox as wel as other diseases is amply attested by the results of what amounts to the greatest control experiment ever made in this connection; namely, that of the town of Leicester, England.

Leicester

In the smallpox epidemic of 1871-2 Leicester, then a town of 200,000 population, had a smallpox deth rate of 3,500 per million living ("The Wonderful Century, Wallace Diagram VIII), and this was after 20 years of compulsory vaccination. The disastrous failure, as it seemd to the people of Leicester, of the preventiv mesure on which they had depended, caused the inauguration of a new policy. The people at large refused to hav their children vaccinated and

the officials whose duty it was under the English law to require it, refused to prosecute them. The most careful isolation of smallpox was put in effect, sanitary improvements wer instituted, the town was clensd, pure water was provided, the best of hospital accommodations secured. For more than thirty years now vaccination has been ignored there with the result that it is today (1918) more than 95 per cent., unvaccinated, whereas in 1871 it was but 5 per cent. unvaccinated. With the single exception of an imported case there has been no smallpox in Leicester since 1906, and no deth from smallpox since 1904. Two books hav been publisht giving the history of the matter in detail, one entitled "Leicester: Sanitation vs. Vaccination" by Mr. J. T. Biggs, sanitary engineer and Town Councillor, the other by Dr. C. Killick Millard, Medical Offiser of Helth, entitled "The Leicester Method." Mr. Biggs is an opponent of vaccination. Dr. Millard stil professes faith in it as a profylactic, but having been forst by local sentiment to rely on sanitation he has been so wel pleasd with the results that he has thot the method worth giving to the world. (All Leicester data quoted in this article wil be found verified in the writings of one or the other of these local authorities.)

"During the 15 years from 1887 to 1901, out of 84,788 children born in Leicester, only 2,885 wer vaccinated, and yet during that period there wer only 21 deths from smallpox in Leicester, and there wer no smallpox cases there in the five years, 1896 to 1900. During this whole period Leicester experienst many importations of smallpox —the same kind of importations that produced epidemics in wel-vaccinted towns like Sheffield and Warrington—but Leicester, in spite of dire profecies, had no serious epidemic from these importations. * * * In 1902, smallpox was brot into Leicester by a tramp with a confluent eruption out upon him, who went about the city for three days. In spite of this, only two cases developt among this unvaccinated population. The next importation was a confluent case from London, in a man who also went about the city for four days, but no further cases developt. There wer afterward five other similar outbreaks in Leicester, resulting in 18 cases, but the cases wer perfectly controld without vaccination by simple methods of isolation and sanitation." (John Pitcairn in Pennsylvania State Vaccination Commission Report, pp. 55-6.)

In an elaborate letter to the London Lancet, July 22, 1911, giving a review of the Leicester system, Dr. Millard states:

"We hav in Leicester a large industrial town, with over 200,000 inhabitants, which has so completely set the vaccination laws at defiance that in the past 28 years, whilst there hav been 155,880 births, only 19,562 vaccinations hav been registerd—i.e., 12.5 per cent. At the time of the last two epidemics, the vast majority—say 80 or 90 per cent.—of the scool children in the town wer unvaccinated, together with a large number of the young adults employd in the factories. Smallpox has been repeatedly introduced into the town. It has three times succeded in establishing itself in epidemic form. In one epidemic as many as 50 cases occurd in one week, and as many as 150 in a period of four weeks. Yet the disease has never caut on amongst the unvaccinated section of the community, nor has it ever been necessary during my term of offis to close a scool on account of smallpox. Surely such an experience would be impossible if orthodox theories about the danger of the spred of smallpox amongst unvaccinated persons wer correct. * * * Nor is the Leicester system an expensiv one, as is so often urged against it. On the contrary I submit that it is *far cheaper* than a system of universal vaccination and revaccination (followd by a third vaccination of all males, as in Germany) would be. Space forbids me to enter into this here, but I am quite prepared to justify my statement, The Leicester experiment is about as conclusiv as the experience of one town can be. It has now lasted for a quarter of a century. It is confirmd by the more recent experience of the country generally, where an increasing neglect of vaccination has *not* been followd by any evidence of an increase of smallpox generally. I hav thot about this question for a good many years, and I may claim to hav had some little experience of the subject, having been in the Birmingham epidemic of 1893-4 before I came to Leicester."

England

At this point it is proper to refer to the experience of Great Britain generally, which the Leicester Helth Offiser mentions as confirming his conclusions that the Leicester method is preferable to vaccination.

At the close of the sessions of the British Royal Commission on Vaccination (to go no farther back), that none too competent body (and if any reader consider the criticism unwarranted, he is referd to the judicious remarks of the author of "The Wonderful Century," p. 235), recommended a modification of the Vaccination Act for the release from its provisions of the conscientious objector. Accordingly, in 1898, Parliament amended the law (requiring the vaccination of infants) by tacking on the so-cald "Conscience Clause." This proved not so effectiv as intended and in 1907 a new law was past. From 1898 the exemptions hav risen until in 1915 and 1916 they hav been upwards of 36 per cent. of the total births (Reports of Registrar General), which latter is subject to some discount for infants dying before reaching the limit of the vaccinal period.

The substitution of sanitary mesures for compulsory vaccination has disappointed the vaccinationists; smallpox calamities hav not occurd, but on the contrary there has been a remarkable falling off in smallpox deths. The Hon. John Burns, President of the Local Government Board, made the following statements in the House of Commons, on April 12, 1911:

"Just as in proportion in recent years exemptions (from vaccination) *hav gone up from 4 per cent. to 30 per cent., so deths from smallpox hav declined. * * * During the time that I hav had the honor of being at the Local Government Board, the following hav been the deths from smallpox in a city of 4,500,000 inhabitants*: —1906, no *deth; 1907, no deth; 1908, no deth; 1909, 2 deths;* 1910, *no deth. So that in five years there hav been only two deths from smallpox in a city of 4,500,000 people. Not even Germany or Berlin can transcend those figures."*

A comparison of smallpox in London and Berlin for nine years (1904-12) has alredy been presented and shows the Berlin deth rate to be 72 per cent. abov that of London, and now we hav seen that the Conscience Clause has resulted in a large vaccination default, while Berlin is stil under rigid vaccination and revaccination. So that the less vaccinated town is the freer of smallpox of the two.

British Army and Navy

The British Army and Navy constitute another conclusiv test, as Professor Wallace has pointed out, and he compares this body of vaccinated and revaccinated men, numbering 220,000, with Leicester's 200,000, scarcely any vaccinated, as follows:

Army and Navy (1873-94) smallpox deth rate per million, 37.

Leicester (1873-94) smallpox deth rate per million, under 15.

Whereat he pointedly remarks:

"It is thus completely demonstrated, that all the statements by which the public has been guld for so many years, as to the almost complete immunity of the revaccinated Army and Navy, ar absolutely false. It is all what Americans call *bluf*. There is *no* immunity. They hav *no* protection. When exposed to infection, they *do* suffer just as much as other populations, or even more." ("The Wonderful Century" pp. 284-5.)

Yes, when compared with unvaccinated Leicester, more than twice as much.

Pre-Vaccination Smallpox

Two other points and we ar done with this aspect of vaccination. Smallpox before Jenner and smallpox afterward require elucidation, and then a word about "authorities," and we pass to a consideration of the mischief done by vaccination.

Smallpox before vaccination was introduced, has been much exaggerated, notwithstanding the disease was systematically propagated and spred from 1721 onward by the process of inoculation which was introduced in England from Turkey and made fashionable by Lady Mary Wortley Montagu. It was not at first largely adopted, owing to the severity of the disease produced, and by 1728 had almost ceast. It was revived in 1740, and in 1754 was authoritativly sanctiond by the Royal College of Physicians, who pronounst it to be highly salutary to the human race. (W. Scott Tebb, M.D., "A Century of Vaccination," p. 11.)

Leading medical men set up establishments where fashionable people congregated and wer inoculated with smallpox, wholesome food and plently of fresh air and

exercize being prescribed to keep the sickness at the minimum. As there was no quarantine of the cases, this practis caused the disease to spred. Dr. Farr, Registrar-General 1857-67, and a noted British statistical authority, says: "Smallpox attaind its maximum mortality after inoculation was introduced. The annual deths from smallpox registerd in London, 1760-1779, wer 2,323. In the next 20 years they declined to 1,740. This disease, therefore, began to grow less fatal before vaccination was discoverd, indicating together with the diminution of fever, the general improvement of helth then taking place." ("Vaccination and the State," Lupton, p. 13.) The sanitary improvements leading to this helth betterment ar enumerated by Professor Wallace as, better roads and means of bringing fresh vegetables and meat from the country, the construction of sewers and better water supply, the widening of streets and laying of first granit paving (1766), improved dwellings for the working classes, the closing of graveyards in towns, etc. ("The Wonderful Century.")

Next came Jenner with a substitute for inoculation. Whatever the source of the vaccine of that day, it was not smallpox and did not directly spred smallpox as had its predecessor, inoculation. It is quite plain, therefore, that the cessation of smallpox propagation by means of inoculation must cause a decrease in the disease, regardless of what took its place, or whether any substitute was adopted. This is precisely what happend, and as inoculation declined smallpox necessarily fel off.

Modern sanitary science may be said to hav had its birth in the latter half of the eighteenth century. Its effects upon the deth rate of the more important diseases in the city of London ar shown in Dr. Farr's table printed in the Third Report of the British Royal Commission on Vaccination, p. 198. Two periods, 1771-80 and 1801-10, strikingly illustrate this decrease.

	1771-80 Deths per 100,000 Living.	1801-10 Deths per 100,000 Living.
Fourteen infantile diseases	1,682	789
Smallpox	502	204
Fevers	621	264
Consumption	1,121	716
Dropsy	225	113

It wil be seen that *all* the important diseases decreast, so that there must hav been a common cause. Commenting

on the change taking place in the living habits of the people in the forty years coverd by this comparison, Professor Wallace says:

"The remarkable feature of this diminution of mortality is, that *in no similar period between 1629, when the Bills of Mortality began, down to the present year, has there been anything like it.* And the same may be said of the causes that led to it. Never before or since has there been such an important change in the food of the people, or such a rapid spredding out of the crowded population over a much larger and previously unoccupied area; and these two changes ar, I submit, when taken in conjunction with the sanitary improvements in the city itself, and the much greater facilities of communication between the town and country around, amply sufficient to account for the sudden and unexampled improvement in the general helth, as indicated by the great reduction of the deth rate from all the chief groups of diseases, including smallpox." ("The Wonderful Century," p. 322.)

The diet of the people (owing to improved communication) had changed from bred, cheese, beer, salted meat and fish, to potatoes and other vegetables, fruit, milk, tea and fresh meat. (Ibid, pp. 318-321.)

But this was sanitation; the promises made for vaccination ar stil unfulfild. Dr. Crookshank in his inaugural address to the Medical Society of King's College, London, October 26, 1894, referring to Britain's experience said:

"That vaccination is capable of extirpating the disease or of controlling epidemic waves is absolutely negativd by the epidemic in 1825, and the epidemics which followd in quick succession in 1838, in 1840, 1841, 1844-5, 1848, 1851-2. Vaccination was made compulsory in 1853, but epidemics followd in 1854, 1855 and 1856, culminating in the terrible epidemic in 1871-2 with more than 42,000 deths. Epidemics followd in 1877 and 1881." ("Vaccination and the State," Lupton, p. 13.)

Smallpox of the pre-vaccination era, as we hav seen, took a hevy toll because it was deliberately manufactured, with ful medical sanction, and also because of the living conditions of the time. Besides, shal we forget to make allowance for improved modern methods of care and treatment? Surely we hav a right to expect something in this regard from the medical profession—else we must hav their

confession that they hav made no progress in a century and a quarter.

There is not, however, one scintilla of evidence that vaccination has contributed to its reduction, this being amply accounted for on other grounds; on the contrary, Dr. Creighton and many other investigators hav found strong indications that vaccination has causd and intensified the disease. The United States Army in the Philippines is a case in point. Many German towns where, in the epidemic of the erly '70's, Dr. Creighton found the few vaccinated slower to take the disease than the many vaccinated, likewise lend color to the claim. (Encyclopedia Britannica, Ninth Edition, Article on Vaccination.)

"Authorities"

Authority and "concensus of medical opinion" should hav no terrors for those who remember, as Viscount Harberton recently pointed out, that it was "expert opinion" that burnd witches, that pronounst the erth flat, that salivated and bled the sick to deth, and in fact that has been responsible for all the prevalent errors of the past.

Who is an authority on vaccination? Here is the reasonable anser of Mr. Arnold Lupton, Member of Parliament:

"I would suggest that a real authority is a man who has devoted some years of his life to the study of the vaccination question, unbiast by pecuniary advantages or professional sympathy." (Vaccination and the State.")

Assuredly he is *not* an authority who refuses to weigh the evidence and the arguments of the other side. "He who knows only his own side of the case knows little of that," said that master controversialist, John Stuart Mill.

Mesured by these standards, J. J. G. Wilkinson, M.D., M.R.C.S., of London, author of numerous scientific and filosofical works, may be considerd qualified. He was repeatedly urged by anti-vaccination friends before he could be prevaild upon to make a special study of this question. Eighteen years after he began his investigations he wrote:

"Not denying other forms of social wickedness, I now, after careful study, regard vaccination as the greatest and deepest of all forms, abolishing the last hope of races, the newborn soundness of the human body."

William White in his "Story of a Great Delusion" quotes Wilkinson's charge that vaccination is "unfysiological," a principle to which the medical profession wil doubtless return after it has sounded the depths of "serum" iniquities. He first recites the processes of blood formation. In nature nothing enters the blood and becomes part of it until it is first selected by the sense of taste. It is then eaten, broken up and carried thru long avenues of introduction: along these avenues stand many sentinels exercizing their qualifying and mitigating and selecting functions: digestiv juices and glandular and lung purifications act upon the blood pabulum before it becomes part of the stream of life. "This is fysiology and divine human decency, and like a man's life.

"Vaccination traverses and tramples upon all these safeguards and wisdoms; it goes direct to the blood, or stil worse, the lymf, and not with food; it puts poison, introduced by puncture, and that has no test applicable to it, and can hav no caracter given to it, but that it is five-fold animal and human poison, at a blow into the very center, thus otherwise garded by nature in the providence of God. This is *blood-assassination* and like a murderer's nife."

Dr. W. J. Collins was for twenty-five years public vaccinator of London. Study and his own experience finally convinst him that vaccination rather produced than diminisht smallpox, and he gave up his position and $2,500 a year and publisht a book to prove his case.

Sir William Collins, a medical man of eminence and Member of the Royal Commission on Vaccination, wrote the dissenting statement known as the Minority Report, and favord a more radical mesure than the Conscience Clause.

Dr. Carlo Ruata, Professor of Materia Medica at the University of Perugia, Italy, has been a leader in the anti-vaccination struggle in Europe. On a charge of having instigated the people of Italy to evade the vaccination laws, he having declared compulsory vaccination unconstitutional and incapable of enforcement, he was arraind in the Pretor's Court at Perugia to anser to the indictment. Acting as his own lawyer, he ably defended himself and was triumfantly exonerated. In discharging Professor Ruata, the Pretor said:

"* * * All the magistrate has to do is to recognize that scientific truths ar neither absolute nor immutable; that they ar subject to a continual course of revision and

criticism which modifies them, corrects them, and substitutes higher truths in their places. The fundamental principle in this case is that the right to propagate one's own convictions by any peaceful means is an incontestable one, and, therefore, Professor Ruata's propaganda against vaccination is, in its legal aspect, fully legitimate, and does not lie under any penal disability."

In his defense, Professor Ruata, after reciting the disastrous results of vaccination in Italy, used these words:

"Wer it not for this calamitous practis, smallpox would hav been stampt out years ago, and would hav wholly disappeard; and now tel me if it is not necessary, nay, if it is not an imperativ duty, on the part of one who clearly sees these things, to cry out on the housetops, to the nations and to their legislators, to everyone, 'BELIEVE NOT IN VACCINATION; IT IS A WORLD-WIDE DELUSION, AN UNSCIENTIFIC PRACTIS, A FATAL SUPERSTITION, WHOSE CONSEQUENCES AR MESURED TODAY, ONE HUNDRED AND SIXTEEN YEARS AFTER ITS BIRTH, BY THOUSANDS OF THOUSANDS OF DED AND WOUNDED; BY TEARS AND SORROW WITHOUT END.' "

Dr. Adolf Vogt, Professor of Sanitary Statistics and Hygiene in the University of Berne, gave much testimony before the British Royal Commission as a statistical expert. This is one of his statements in that capacity:

"After collecting the particulars of 400,000 cases of smallpox, I am obliged to confess my belief in vaccination is absolutely destroyd."

Dr. Charles Creighton, a recognized authority in epidemiology, and then orthodox on vaccination, was selected by the publishers of the Encyclopedia Britannica, Ninth Edition, to write the article on Vaccination. He made an original and exhaustiv inquiry into the subject with the result of its making him an uncompromising anti-vaccinationist. Being in doubt whether the article he found himself forst to write would be acceptable, he put the question to the Editor, saying what he had found was contrary to accepted medical opinion. But he was informd that what the Britannica wanted was facts, and they trusted him to present them.

The fifteen colums of this article ar packt with irrefutable proofs of the fallacy of vaccination.

The publication of Dr. Creighton's article causd Prof. Edgar M. Crookshank, bacteriologist of King's College, to make an independent study of vaccination on the scientific

side, to see whether Dr. Creighton's conclusions (which had been based on statistics) could not be assaild on that side. The result was the two ponderous volumes, "The History and Pathology of Vaccination," in which he shows the practis to be uncertain, unscientific and dangerous. The final conclusion of this medical authority and profound student of the subject was:

"I maintain that where isolation and vaccination hav been carried out in the face of an epidemic it is isolation which has been instrumental, in staying the outbreak, tho vaccination has receivd the credit. Unfortunately a belief in the efficacy of vaccination has been so enforst in the education of the medical practitioner that it is hardly probable that the futility of the practis wil be generally acknowledged in our generation, tho nothing would more redound to the credit of the profession and giv evidence of the advance made in pathology and sanitary science."

The publisht conclusions of Creighton and Crookshank arousd the curiosity of a third distinguisht man of science in England. Professor Alfred Russel Wallace, in his autobiography, relates how a friend had repeatedly urged him to go into the vaccination question, and how difficult it was for him to believe the medical profession at large could hav made the blunder the anti-vaccinationists alleged. The defection of the two medical lights mentiond appears to hav turnd the scale, and Professor Wallace enterd upon an independent study of the subject. The result was another convert. Professor Wallace was then moved to prepare an essay on the subject "for the purpose of influencing Parliament and securing the speedy abolition of the unjust, cruel and pernicious vaccination laws." It appeard as Chapter XVIII of "The Wonderful Century," and has also been publisht by itself with the title "Vaccination a Delusion; Its Penal Enforcement a Crime."

He proves his case from the evidence presented before the Royal Commission and embodied in its Reports, and expresses his disgust with a commission unable to understand the evidence laid before it in the following words:

"A commission or committee of enquiry into this momentous question should hav consisted wholly or almost of statisticians, who would hear medical as wel as official and independent evidence, would hav all existing official statistics at their command, and would be able to tel us, with some show of authority, exactly what the figures proved,

and what they only renderd probable on one side and on the other. But insted of a body of experts, the Royal Commission, which for more than six years was occupied in hearing evidence and cross-examining witnesses, consisted wholly of medical men, lawyers, politicians, and country gentlemen, none of whom wer traind statisticians, while the majority came to the enquiry more or less prejudiced in favor of vaccination. The Report of such a body can hav but little value, and I hope to satisfy my readers that it (the Majority Report) is not in accordance with the facts; that the reporters hav lost themselvs in the mazes of unimportant details; and that they hav fallen into some of the pitfalls which encumber the path of those who, without adequate knowledge or training, attempt to deal with great masses of figures."

Referring in his autobiografy to his essay, "Vaccination a Delusion," Professor Wallace says:

"I feel sure the time is not far distant when this wil be held to be one of the most important and most truly scientific of my works. * * * The great difficulty is to get it red. The subject is extremely unpopular; yet as presented by Mr. William White in his 'Story of a Great Delusion,' it is seen to be at once a comedy and a tragedy."

The greatest difficulty, he might hav stated, is in convincing the slightly smatterd medical vaccinationists. Their want of thoro information is supported by a prejudis so bitter it causes timid men to court safety and keep in the ranks. A doctor whose liberal sentiments wer suspected was askt to appear before a legislativ committee and state his opinion of vaccination. He replied when prest that he "could not afford it," and later explaind that he had lernd "not to buck against the doctors." Another, a man just out of medical scool was askt by a former intimate, "Wel, what do you think of vaccination now?" His reply was, "We young doctors don't always say what we think of vaccination, else our heds might come off like that!" with a snap of his fingers.

Among Americans who hav dared all and raisd their voices against this privileged aristocrat, doubly hauty in democratic America, is Dr. John W. Hodge, who has made of Niagara Falls a second Leicester. That town with little vaccination and no smallpox deths for a quarter of a century, tho peculiarly exposed to infection because visited by more tourists than any town of its size in America, had long been a painful spectacle to State Medicin and the vaccine

interests. Therefore it was with joy and fanatic zeal that these gentry pounst upon it in the winter of 1914, bent on making an example of her. An outbreak of *chickenpox* was magnified into a "smallpox epidemic," the Public Helth Servis at Washington took a hand, and what with city medical officials, State medical officials and Federal medical officials, many persons wer frightend and forst into submission to the vaccinator's needle. Some 500 cases of *chickenpox* and other rashes wer recorded as smallpox. *There wer no deths save those causd by vaccination*, of which one or more wer reported in the press. (No telling how many more wer wrongly reported.)

Niagara Falls as a horrible example wil impress none who take pains to ascertain the facts, but with the superior means of publicity in possession of the "medical ring," the latter may feel themselvs avenged upon the man who has for years been hurling such bombs as the following:

"Think of the unparalleld absurdity of deliberately infecting the organism of a helthy person, in this day of sanitary science and aseptic surgery, with the poisonous matter obtaind from a sore on a diseasd calf!"

Dr. J. H. Tilden of Denver, editor of the "Philosophy of Health" and author of many medical works for popular instruction; Dr. Elmer Lee, editor of "Health Culture" magazine; Dr. Charles E. Page of Boston, author of a work on Consumption and another on the Care of Infants; Dr. Alexander Wilder, Professor of Fysiology U. S. Medical College, N. Y.; Dr. Felix Oswald, author, medical writer and traveler; Dr. M. R. Leverson, who has a work on Vaccination Pathology in course of preparation; Dr. Zachary T. Miller of Pittsburgh, Pa., whose new "Declaration of Emancipation,, appears at the close of this lecture; and hundreds of other American physicians, hav declared themselvs opposed to vaccination; forst thereto by conviction, against their education, their preconceivd opinions and their natural inclination not to oppose receivd opinion. If the captious critic finds no names here which ar to his mind of sufficient eminence, let him set against that objection the fact that the orthodox medical man loves his orthodoxy, with its fruits of soft-ease, good-fellowship and possible fame, abov all else. Let him remember that these here named and all who hav dared to become conspicuous in opposing vaccination, loved truth abov all else, and thereby knowingly forfeited all chance of ever joining that galaxy

of shining ones whom the "American Medical Trust" delights to make the world honor and hold in reverence. Here is enuf to make a thotful man think at least twice before he offers "the concensus of medical opinion" as an argument for faith in vaccination.

Vaccination Dangers

Vaccination disasters is a subject large enuf to fil volumes. It has alredy done so without the tale having been adequately told. Dr Leverson's forthcoming work wil be perhaps the most ambitious effort yet undertaken. Limitations of space permit but a brief reference to the subject here.

A few points which stand forth conspicuously the moment we begin to serch for a record of deth and injury by vaccination must here be set down. Doctors make the original reports. Doctors keep and compile the records. Doctors interpret all the facts. Doctors ar committed—especially is this true of *official* doctors—to the dogma that vaccine virus is a "harmless substance." In the complex of disease conditions there is always leeway for choice as to what shal be set down as causing a deth or an injury. Trust the "orthodox doctor" to find something besides vaccination to blame! "Caut cold in it," "Got dirt in it," "Complications set in," ar the familiar excuses; and the War with Germany has provided a new one: "German spies hav contaminated the virus!" These and similar flimsy subterfuges, utterd with due solemnity by the doctor, prepare family, friends and the public for the report of deth as due to "tetanus," "septicemia," "erysipelas," or whatever form of disease was induced by the operation. The story of Dr. Henry May, Medical Officer of Helth of Aston, England, has become a classic, and is repeated here because his example has been all but universally followd. He tels it himself, in the Birmingham Medical Review of May 1874:

"In certificates given by us voluntarily, and to which the public hav access, it is scarcely to be expected that a medical man wil giv opinions which may tel against, or reflect upon, himself in any way. In such cases he wil most likely tel the truth, but not the whole truth, and assign some prominent symptom of the disease as the cause of deth. As instances of cases which may tel against the medical man himself, I wil mention erysipelas from vaccination, and

puerperal fever. A deth from the first cause, occurd not long ago in my practis; and altho *I* had not vaccinated the child, yet, *in my desire to preserve vaccination from reproach, I omitted all mention of it from my certificate of deth.*"

Whether due to a craftier prudence that sees the advantage of moderate claims, or whether it be that a spasm of honesty and courage seizes occasionally upon medical men, the fact nevertheless remains that British records hav long carried the tale of a few deths from vaccination annually. Deths from vaccination, smallpox and chickenpox for three years in a registration area of 21,000,000 population, as shown by the Registrar-General, ar as follows:

Year	Vaccination	Smallpox	Chickenpox
1906	29 deths	21 deths	106 deths
1907	12 "	10 "	120 "
1908	13 "	12 "	93 "

The chickenpox deths ar generally understood to be cases of recently vaccinated persons who cannot be officially admitted to hav smallpox, and so they (officially) present the anomaly of fatalities from a non-fatal disease.

In the 15 years, 1881-1895, there ar 785 deths admitted to be due to *vaccination* in England and Wales. (Registrar-General's Report for 1895, p. 52.)

Professor Wallace testified as follows before the Royal Commission:

"While utterly powerless for good, vaccination is a certain cause of disease and deth in many cases, and is the probable cause of about 10,000 deths annually, by five inoculable diseases of the most terrible and disgusting caracter." (Third Report, Minutes of Evidence, Q. 7713, p. 34.)

From Professor Ruata's Defense, previously mentiond ar taken these extracts:

"During the past days I hav been compeld to see the manifold and disastrous effects due to vaccination. * * * I hold in my hand hundreds of letters relating to deths causd by vaccination. * * * As a result of certain vaccinations executed at the barracks of Udine some few years ago, about 15 soldiers fel seriously il, and three of them succumd. * * * In a volume of Prussian Government Statistics for 1909 I hold in my hand, the last publisht, it is admitted that 30 deths took place in Prussia

during that year as a consequence of vaccination, in addition to 113 cases of minor importance which did not result in deth. * * * In the years 1907 and 1908, 3,533 complications wer reported in our country as a result of vaccination. And what ar these 'complications?' The official volume wil tel us. They ar meningitis, neumonia, tumors, general eruptions, erysipelas and other similar delights. * * * The sanitary officer of Turin wrote in 1902, that prior to 1888 vaccination was so destructiv in Turin that 80 per cent. of foundling children died from vaccinal erysipelas. But even while he witnest this slauter of the innocents, he went about preaching that vaccination was perfectly innocuous and causd 80-per-cent. lymf to be distributed gratuitously to the doctors of Turin."

A writer in the Westminster Review of August, 1904, points out the difficulty of convicting vaccination of causing diseases of lengthy incubation, yet holds that the evidence tho inferential is cumulativ and overwhelming. Speaking of the slow maturing diseases whose common feature is derangement and disintegration of celular tissue, he says:

Tuberculosis

"Of these tuberculosis is probably most in point. It is a disease to which the cow is especially liable, and its presence in the animal (as experiment has proved) can often be determind only by a post-mortem examination. According to Dr. Perron, in a French medical journal, tuberculosis, which was once an exceptional thing, has in the last hundred years been stedily extending its ravages, in spite of the general advancement in hygiene, til it has attaind the rank of a pestilence. He finds himself impeld to the conviction that the causal connection is with vaccination as the only condition which has advanst step for step therewith. Herein he finds explanation of the extraordinary devastation wrot by tuberculosis in the European armies (especially in the first and second year after enlistment) where revaccination is the order of the day, in spite of the care otherwise lavisht on the soldier's fysical welfare. With this clue we may find significance in the figures recently publisht showing the deths from tuberculosis in Germany (where vaccination is now so much at home) as thrice more numerous than in England. As their population is less urban than ours, this proportion, on any other than our pres-

ent hypothesis, stands unexplaind. Leicester, on the other hand, which has long renounst vaccination, recently came out best among 18 towns whose scool children wer examind for traces of thisis."

With relation to European armies, the reports of the unexampled ravages of tuberculosis which ar coming to us this year (1918) from the belligerents other than ourselvs, lend terrible emfasis to the words of Dr. Perron. *"Our turn wil come."* It is also to be noted that the armies of Great Britain ar suffering least from this disease. Great numbers of her soldiers wer never vaccinated until their entry into servis for this war, and a lesser number hav held their ground and refused vaccination and inoculation even now.

On one other disease we must quote the Review article:

Cancer

"Another malignant disease affrightingly on the increase—an increase also unexplaind, in spite of the weird and wonderful guesses which range in accusation from tomatoes to common salt—is cancer. In the 20 years ending 1909 its yearly fatality (English) had gone stedily forward from 19,433 to 34,053. Where all is dark it is not intended to dogmatize, but it is permissible to point out that the evidence tending to implicate vaccination in the matter has more body and substance than that of any other theory hitherto promulgated. Among so many absurd conjectures solemnly canvast we may at least take note of some considerations advanst by—amongst others—an Australian doctor—Meyer. He points out that, while twenty-one years ar needed to complete the growth of a human being, four or five years represent that of the cow; that the cels of which the cow's flesh is constituted grow much more rapidly than the human cels; and consequently that the introduction of bovine protoplasm into the human system must tend to upset the constitutional balance, to foster disorganization of celular tissue and promote the general conditions of disparity, disintegration, and destruction in which cancer finds birth. In the "Medical Press" of March, 1903, J. J. Clarke, M.B., F.R.C.S., states, as the result of his own investigations, that certain 'bodies' found in the vaccine pustule ar indistinguishable from certain bodies found in cancerous growths, and commenting on this letter the Editor of the

'Homeopathic World' of April, 1903, remarks: 'It is exceedingly dangerous to vaccinate persons who hav a latent tendency to cancerous growths. We hav seen several cases in which cancer has blazed up immediately after vaccination.' As a confirmatory item we may ad a statement publisht by the 'Daily News,' that the highest cancer mortality is in Bavaria and the lowest in Hungary—respectivly the first and almost the last countries to accept vaccination."

Dr. Bell Taylor, famous surgeon-oculist of Nottingham, was so much imprest by the mischief wrot by vaccination that when he died, in 1910, he left a legacy of $75,000 to assist the Anti-Vaccination propaganda.

General Deth Rate as Influenst by Vaccination

With the enforcement of vaccination in Japan, there has been a coincidental increase of other diseases. In 1908 there wer in Japan, exclusiv of Formosa, 17,790 cases of diftheria with 4,971 deths—the very high deth-rate of 27.9 per cent. Scarlet fever shows a markt increase with a very high deth-rate. Tuberculosis has greatly increast since 1885 among all classes of the population. Dr. Kitasato, as Japan's official representativ at the sixth International Congress on Tuberculosis, which met in Washington in the fall of 1908, said: "The statistics show that it (tuberculosis) is tending to spred more and more widely in Japan. Cases of tuberculosis in children, for instance, which had been rarely known in times past, hav markedly grown in recent years. This observation is confirmd by pediatrists." (Report of John Pitcairn, Member of the Pennsylvania State Vaccination Commission, p. 48.)

Conversely, there has been a coincidental improvement in the general helth of the town of Leicester with the abandonment of vaccination. In 1873, when vaccination was at its height (95 per cent.) the general deth rate was also highest—27 per 1,000, or 5 to 1,000 worse than the average for England and Wales. Since that time—when smallpox kild 360 of her citizens and with them the local faith in vaccination—the deth rate has been on the decline. In 1889, when vaccination had sunk to 5 per cent., the deth rate had fallen to 17.5, in 1902-6 it averaged 14.18, and since then has fallen to less than 12, one of the lowest in the kingdom in spite of every disadvantage of occupation,

soil and situation. (Ernest McCormick, "Is Vaccination a Disastrous Delusion?")

Vaccination as a Cause of Smallpox

Authorities heretofore quoted hav, at least by implication, held vaccination, insted of *preventing* smallpox, is a direct *cause* of it. In these later days, with the virus confessedly of variolous origin, it is difficult to see how that conclusion can be avoided. Bovinized smallpox inoculation upon the human must stil be smallpox, if there is such a thing as specific disease. When but a single pustule forms, the amount of contagion may be slight; but when, as often happens, there ar many pustules perhaps a general eruption, the effluvia, germs or what you wil, which convey the disease ar increast in volume, hence the degree of contagiousness is correspondingly increast. Due to this fact it is doubtless that an unvaccinated member of a family, closely domiciled with one in whom vaccine is working, possibly sleeping in the same bed with such a one, occasionally contracts the disease from such contact. In a case of this kind the facts ar misinterpreted by vaccinationists, who immediately deride the unvaccinated one for his failure to secure "protection." He wil, nevertheless, usually recover sooner and more completely than his vaccinated brother. The point should be made and insisted upon by anti-vaccinationists that vaccinated persons should be isolated during the period of attack of the so-cald vaccina as sedulously as tho they had smallpox contracted in the natural way. These considerations render plausible the assertion made by Professor Ruata and others that smallpox cannot disappear so long as it is systematically propagated and spred by vaccination.

Foot and Mouth Disease Virus Used to Vaccinate

Letters to Dr. Zachary T. Miller from the leading vaccine concerns of this country, in response to inquiries from him, publisht in the Transactions of the Sixtieth Session of the American Institute of Homeopathy, reveal the fact that "spontaneous cowpox" is no longer found, if it ever existed, hence the resort to variola for the seed vaccine. Sometime after these letters wer written, a virus com-

pany near Philadelphia procured from Japan what was supposed to be a culture of cowpox, and the virus from this culture was sold to another company near Detroit. From the latter spred the *foot and mouth* disease epidemic of 1908. What was supposed to be cowpox thus proved a culture of foot and mouth disease insted! (John Pitcairn in "Both Sides of the Vaccination Question," p. 18.)

This stuff in the meantime had been widely distributed and inoculated into the children of the country. The reason the disease did not spred from the Philadelphia plant was probably due to the fact that this concern takes the precaution of killing all its calvs before removing the vaccine, while the Detroit company borrows them and returns them to the farms when it is done with them. The Philadelphia company, it may be stated in parenthesis, among its other products puts out a "pre-digested beef extract," for the use of invalids and others, so that the calf is not wasted—an important point in these days of food conservation. (Kultur in our very midst?)

Many hav been the collections of "Vaccination Disasters" publisht, but perhaps none is more impressiv than one compiled four years ago by the Hon. James A. Loyster of Cazenovia, N. Y. Mr. Loyster, in the fall of 1914, had his only son, a robust lad of some 13 years, vaccinated, in obedience to a helth-board mandate. He, *himself,* had been vaccinated in boyhood and had never had any doubts of the value of the practis. The boy died of the ilness that followd. The father thereupon set an inquiry on foot, by means of letters, thru the rural and semi-rural portions of the State of New York. In the preface to his pamflet he takes pains to say he went to no anti-vaccinationists for information. From neutral and pro-vaccination sources, therefore, he was able to gather, without resort to the large cities of the State where the major part of vaccinating is done, particulars of fifty cases of vaccine disaster, twenty-seven of them fatal, which occurd during the year 1914. Tetanus, meningitis and infantile paralysis ar among the diseases causd, but the connection with vaccination was held in all cases to be direct and unmistakable.

Vaccination is a failure. No doubt on this point can exist in the minds of any who hav given it a thoro study. Its fraudulent caracter is indicated by the following points:

1. The secrecy and compulsion resorted to to keep it in vogue.

2. The refusal of its supporters to consider it an open question, tho great numbers of people, including many scientific men, oppose and denounce it.

3. Insistence by the medical profession that even compulsory vaccination is purely a medical question, when as a matter of fact it is first a statistical and second a political question. Statistics is a science to be left to statisticians rather than doctors, while *politics in a democracy belongs to the whole people.*

4. The verdict of all the great statisticians of the world who hav made a special study of the question has been against vaccination.

5. In fact it is, after all, a question of *plain common sense.* Taking poisonous matter from a sore on a sick calf and putting it into the system by way of an open wound does not appeal to common sense. Common sense seeing the results finds itself justified.

A fair and just settlement of this age-long dispute is suggested in the magazine, "Life," in the following words:

"The question can be settled for good and settled right by prohibiting compulsory vaccination.

"Let those who want vaccination be vaccinated. If there is any protection in it, they hav that protection. If their own vaccination does not protect them, neither would the vaccination of the entire community."

Until this is done, Dr. Z. T. Miller's "New Emancipation Declaration" may wel be the *vade mecum* of the anti-vaccinationists who would get anywhere.

"We must defeat the effort of the man who would make sick an entire community of wel people in the fear that a small portion of it may get sick.

"We must denounce the idea that a helthy person is a menace to anybody.

"We must see that our children's education is not predicated on the point of the poisond quil.

"We must see to it that subcutaneous injection of an absolute poison does not take the place of sanitation and hygiene.

"We must declare against superstition practist by the State.

"We must not surrender the right of personal privilege in the selection of our food, our religion, our politics, or our medicin."

VACCINATION FOR DISEASES OTHER THAN SMALLPOX.

Now that the "vaccine therapy" or "anti-toxin inoculation" for everything has become so popular with a certain class of physicians, it is no more than proper to mention it in this work.

From what I hav alredy said on the subject, the reader wil infer that I am not a vaccinationist. No, I am not. *I believe sanitation and hygienic mesures* (isolation if necessary) ar the means to combat any and all contagious or infectious diseases. I do not believe that vaccination of any kind does any good without doing harm. In other words, if it is of any value, it is "robbing Peter to pay Paul." To put a poison into the body to keep out some other poison is on the same principle as overworking a person to make him strong. The system naturally fights off any diseasd material that gains entrance to it, but nature is prepared to ward off disease that may come to the body thru the nose, mouth, and other portals and has never equipt her children to hav poison of all kinds thrust into them thru other entrances.

We ar taking undue advantage of an animal when we inoculate that animal with a poison. The system fights off poison to the best of its ability, and the harder it fights, the greater the "reaction." That is all reaction is—nature trying to rid itself of something that is unnatural; and in the case of vaccination it is a poison, or what acts the same on the system—a foren substance. The body, to protect itself against the infection that is so brutally thrust upon it, uses up energy that is needed for other work. Therefore if there is any latent disease in the body, which the protectors of the body ar trying to keep in abeyance, it sees the gard relaxt and breaks forth.

With the delicate tests that I use in diagnosis, that is, the Bio-Dynamo-Chromatic method, I hav been able to very

often find a very incipient condition of tuberculosis in a patient. According to past experience, I know such a person can be cured by natural methods but if they fall into the hands of those who do not respect nature and think that nature does not know her business, and ar vaccinated either with tuberculin or anti-tyfoid, or anti-???, the next thing I hear is that they ar failing very fast from the effects of tuberculosis. This has occurd so many times that now I caution every one whom I diagnose as tuberculous. I do this as a precaution for the patient, because I know what vaccination means to them.

Unfortunately things in this country hav so shaped themselvs against the country's wil that many things ar now being done that would not hav been done under ordinary circumstances; and many things that would hav seemd impossible for anyone to even think of a year ago ar now compulsory; but the clouds wil soon pass over and then there wil be a time of awakening, and it is for such a time that I hope what little I hav said in this book regarding vaccination and medical freedom wil bear fruit.

Recently at a meeting of the Los Angeles County Homeopathic Medical Society, I listend to a very able paper by that estimable and humane physician, W. J. Hawks, M.D. Almost everyone who is fortunate enuf to hav studied Homeopathy has red something of Dr. Hawks' writings. The paper which he red was printed in the Pacific Coast Journal of Homeopathy of January, 1918, and it is appended hereto:

ANTI-TYFOID INOCULATION AND TUBERCULOSIS

By W. J. Hawks, M.D., Los Angeles, Calif.

When, at the request of our Chairman, I promist to prepare a paper on this subject, I had no adequate conception of the magnitude and gravity of the question. If I had had such a conception, I fear I would hav followd the example of the member who was the President's first choice for the task, and hav declined and resignd. But I had strong convictions and opinions on the question, and others germane thereto, and so "fel for" the opportunity to giv them expression. Furthermore, to ad to my embarrassment,

I found on further reflection that I had absolutely no personal knowledge of the subject, and that I must depend altogether upon what I had red and herd. Therefore, all that I can offer ar my own views on statements of facts by acknowledged authorities, and quotations from those authorities.

To my mind, the question of the universal and compulsory vaccination of millions of our selected and most helthy young men of the army against tyfoid fever and other diseases is, from the standpoint of conservation of helth, the gravest that has been presented to the medical profession in a century, and is fraut with possibilities of the greatest danger to their helth and the helth of their children, and the offspring of their children.

That there is always *possible* danger of conveying germs of one or more constitutional diseases by the injection of any animal serum *into the blood stream* of helthy human beings, is not denied; and I venture the assertion that there is always *probable* danger. This is true no matter how carefully the virus (poison) has been prepared. Hence the gravity of the question, and the greatness of the responsibility upon the heds of those responsible for the practis.

Even if it wer unquestionable that the process accomplisht its ostensible purpose and protected the subject from these diseases (of which claim there is no doubt evidence), it would stil be dangerous, as wil be shown later. There might be some excuse for assuming these risks if the cause of tyfoid fever, for instance, was unknown or even doubtful; but this is not the fact. The cause of tyfoid fever is wel and definitly known and unquestiond. This cause is contamination, especially of food and drink, from unhygienic conditions, which can always be overcome and obviated by —in one word—*clenliness* in its broadest meaning. Why, then, take this awful risk?

The practically absolute freedom from tyfoid fever of the Japanese soldiers during the war with Russia, should be an object-lesson as to the efficacy of thoro and all-comprehending practical hygiene. Anti-tyfoid vaccination was not practist on the Japanese soldiers, yet tyfoid fever was a negligible feature in their army sick-list.

As I said before, the question is so big and grave, it is folly to attempt its discussion in a paper so brief as this occasion allows. I am painfully aware that I cannot do it, or myself, justice.

While the title of the subject assignd me is "Anti-Tyfoid Inoculation and Tuberculosis," its proper and sufficient treatment would involv the whole question of anti-disease vaccination with serums or pus from diseasd animals of whatever nature or origin. Arguments in favor of one ar arguments equally applicable in favor of all, and arguments against one ar arguments against all.

Confining ourselvs as closely as possible to the text, the first question that occurs to me is: Is it necessary, in order to protect our choice and helthiest young men from tyfoid fever, that there be injected into their blood a virus—a poison—(they ar synonymous terms) taken from a diseasd animal?

There is absolutely no unquestionable evidence in favor of the affirmativ of this proposition. The evidence of statements that where anti-tyfoid vaccination had been practist the disease was less prevalent, altogether absent, is negativ, and might, with more logic, be used in favor of the more probable proposition that up-to-date hygienic precautions wer the causes of the claimd immunity.

It is more reasonable to claim that dissipation and avoidance of filth wil more tend to protect against disease than the introduction thereof into the blood, more especially when the particular disease to be protected against is so wel understood as to cause; and, being so wel known and unanimously acknowledged, is so easy of removal or avoidance.

If it be claimd as evidence in favor of the proposition the fact that a great majority of the medical profession favor the practis and believe in its efficacy, it is only necessary in reply to remind ourselvs that erly in the last century the same profession believd unanimously in the practis of inoculation of babes with smallpox virus in order to protect them against smallpox. The medical profession was unanimous in saying that the practis was right and proper; and that those who disagreed with them wer a menace to the community and beneath contempt. That practis was later abandond and prohibited by law because it became evident that, insted of being a protection against smallpox, it causd its spred!

Again, I can remember when the same majority of the same profession, with the same unanimity, and with the same abuse of and contempt for the minority that disagreed with them, advocated and practist vaccination from the scab

from the arm of another vaccinated child, using an unselected portion of the *whole scab!*

The majority advocated it, the majority practist it, and hence, according to the "majority" argument, it was the proper thing to do, and "was one of the greatest mesures ever known for conserving the helth of the people!" But, again the majority became the minority, and that vile practis was condemd and abandond. He would be foolhardy who advocated such practis today.

I wonder what the verdict a quarter of a century hence wil be regarding some of the mesures and procedures now advocated and practist by this same "majority!"

Even at the present time the majority favoring universal anti-tyfoid vaccination has begun to lose some of its members. Great Britain has ceast making anti-tyfoid vacination compulsory in its army. Why? Because of evidence of doubtful efficacy for good, and of positiv injury to the soldiers. England tried it and found it *wanting*. And I fear, or rather hope, that the United States wil later also find it so.

After Koch's publications regarding tuberculin, the same "majority" announst and unanimously agreed, that the injection of this disease product was a sure cure or prevention of tuberculosis, and that any one was either a fool or a nave who denied it. Here again the all-wise "majority" has reverst itself, and is acknowledging that it was wrong, and that, given in their crude way, evil, rather than beneficent results followd the practis.

Within the past month I hav herd from the lips of three physicians of acknowledged high standing and extensiv experience, evidence which would convict certain specialists in any court of equity as being guilty of malpractis.

One testified that a young woman, clinically apparently helthy, was prevaild upon, against her own desire and her perfectly competent physician's protests, to consult a tuberculin specialist, who told her she had tuberculosis, and that she must come at once to his place for treatment in the "orthodox way." Result—deth within a year from tuberculosis. This notwithstanding she had never shown a sign nor felt a symptom of that disease.

Another physician told of the case of a prominent citizen and editor who went to one of the most popular tuberculosis sanitariums (also one of the most expensiv) in Southern California. Under the tuberculin treatment he faild

rapidly, until he left in disgust, convinst from experience and observation that the treatment was injuring rather than helping him and others. Immediately after discontinuing the treatment, and all drugs, and commencing to liv a hygienic life, with all the sunshine and fresh air he could absorb, he began to improve and gain flesh and strength, so that he now considers himself practically wel. In consequence of his personal experience he became a "Chritsian Scientist!" And does not this anser the question so often askt as to why so many intelligent and cultivated people adopt that faith? It accounts also for the ever-multiplying numbers of drugless healers and their patrons.

A third physician, who conducts one of the finest tuberculosis sanitariums to be found anywhere, and who has had a wide, practical experience with the disease, and who at one time did as this wonderful "majority" did, said that the practis had been altogether abandond by all experienst and conscientious physicians, because of the unmistakable evil results causd thereby. He said that intelligent experience left absolutely no doubt of the disastrous results of the practis.

Yet there are many apparently respectable, but really unconscionable so-cald "specialists" who ar continually in this manner hastening to their graves numbers of innocent confiding victims of legalized but conscienceless quacks whose only object is money.

I, myself, personally know of a number of such instances. And there is absolutely no redress, nor any way of putting a stop to the outrageous practis.

It would seem that the foregoing had effectually disposed of the "majority" argument. It might seem that what has thus far been said was out of line with the text; but it is not. It is surely germane to the question of "anti-tyfoid vaccination and tuberculosis," for both subjects ar component parts of the whole question of vaccine therapy.

It is acknowledged by all who ar familiar with the facts that anti-tyfoid vaccination invariably produces symptoms of general sickness of greater or less severity, many of the subjects being severely il and confined to bed for weeks. I quote evidence from those who know. Dr. Gay, who has made an exhaustiv study of the subject, writes in his work:

"One of the greatest difficulties that has been present in determining the protectiv value of tyfoid immunization as a whole has been the impossibility of determining the

protection of a given group of persons by other means than the careful study of morbidity statistics among vaccinated people over a long period of years (Firth 66). Stil less hav we any means of determining whether or not a given person who has been vaccinated is actually protected against tyfoid fever.

"The many vaccines that ar stil being advocated indicate the best vaccine has not yet been found and that the best method of proving which is the best vaccine has not been determind."

Dr. Anderson said in the Chairman's address before the Section of Farmacology and Therapeutics (American Medical Association):

"We know that the injection into the body of certain toxic substances may produce a certain primary reaction, but we know little of the secondary or remote effects when such substances ar introduced into the circulation or ar given hypodermatically. We know less about the primary effects of the introduction of many other toxic substances now used for therapeutic purposes and nothing of their secondary or remote action. No doubt many of them in their secondary effects do the body permanent harm and thus may reduce the natural resistance against disease."

The *Medical Times*, London, in its issue of January 16, 1915, before England abolisht compulsory inoculation, said:

"Personally, we ar inclined to the view that anti-tyfoid inoculation is stil in the experimental stage, and, whilst we raise no objection to the experiments being continued in the case of those anxious or willing to be experimented upon, we ar strongly of the opinion that there is a better way of dealing with tyfoid, and all other filth epidemic diseases, and for that reason we deprecate the compulsory inoculation of gallant men who ar perfectly willing to face the all too evident dangers of the field of battle, but ar unwilling to submit to the hidden dangers of anti-tyfoid inoculation."

Lieutenant-Colonel Charles E. Woodruff (retired) from the United States Army Medical Corps, one of the greatest sanitary authorities in the world, says:

"The whole theory of vaccinations and serums is wrong. It insures us against catching one disease only to make us doubly liable to catch others, particularly *tuberculosis*. Most human beings hav a natural resistance to tuberculosis, and with ordinary good fortune and attention to our food and

surroundings we can fight off the white plague til 'old age' or some other cause brings us to the grave.

"Vaccination givs us immunity, for a while at least, against some one specific disease, such as tyfoid or smallpox. This would be very wel indeed if we did not hav to pay for it by losing part at least of our natural immunity to tuberculosis."

In quoting other authorities, Dr. Woodruff said in a recent paper:

"Le Tulle tels me that all serums and vaccines wil cause incipient cases of tuberculosis to get worse. Dr. C. H. Spooner, and Louis and Combe, assistants to Vincent at the Val de Grace in Paris, hav notist that anti-tyfoid vaccines bring out any latent or cronic disease, particularly *tuberculosis*. The latter states that vaccine acts like tuberculin and that they hav thus been able to detect activ tuberculosis in cases where the condition was not suspected before the inoculation.

"Chantmerse, of Paris, informs me that he has seen two cases of rapid tuberculosis develop a few days after anti-tyfoid vaccination, and he warns particularly against using it where tuberculosis is suspected."

Doctor Woodruff further says, when calling attention to the danger of tuberculosis following anti-tyfoid vaccination, in *American Medicine*, of which he was Associate Editor, January, 1914:

"It has been known for a long time that tuberculosis sometimes follows tyfoid fever. One of the most remarkable instances of the reduction of tuberculosis by reducing tyfoid is in the British Army. All other armies show a similar fenomenon, but not nearly to such an extent, because none of them hav been botherd so long with such a tyfoid mortality as has tormented the 70,000 in India until modern sanitation was applied.

"Almost all of the tyfoid is contracted in India, and by newly arrived troops, those of longer residence furnishing the smaller percentage. Hence, when no troops wer sent to India during the Boer War, tyfoid immediately dropt, thus causing the remarkable drop in the whole army from 17.5 per cent. in 1898 to 6.0 per cent. in 1900. The 4000 anti-tyfoid vaccinations done by Sir Almroth E. Wright late in 1898 and erly in 1899, could hav causd only 2.35 per cent. of a drop. As soon as the 'reliefs' began to arrive in 1902-1903, tyfoid at once rose to the normal for that

period of sanitation. Then began that wonderful sanitary campain which has almost glorified the British Army Medical Department—particularly the hard-working part of it in India. Tyfoid began a remarkable drop which has not yet ceast.

"The reduction of tyfoid by sanitation alone has probably been much greater than the figures show, because the deths wer reduced two-thirds between 1897 and 1907, while the admissions wer reduced a half. After 1903, tuberculosis declined at nearly the same rate as the tyfoid until a minimum was reacht in 1907-1908. Then came an unexplaind 70 per cent. increase of 1.9 per cent., following the large number of inoculations, and a later slight decline in 1910 and 1911 corresponding with such reduction of tyfoid as would hav been occasiond by continued improvement in sanitation. The same dependence of tuberculosis upon tyfoid fever is seen in the United States Army after 1890."

American Medicine, April, 1914, of which Doctor Woodruff was then editor, said:

"Any latent or cronic disease may be made worse by the vaccine, even carcinoma and diabetes. Women seem to take the vaccine badly, since many female nurses hav bitterly complaind of symptoms suggestiv of glandular tuberculosis and lasting several months after the vaccination. The action of the vaccine in latent tuberculosis is much the same as that of tuberculin and many unsuspected cases hav been thus diagnosed or traced to the vaccine.

Again, in March, 1915, *American Medicine* says:

"The vaccine has often been charged with activating tuberculosis like tuberculin does, and the French wil not giv it to anyone suspected of the disease."

In the *Medical Record,* May 16, 1914, Dr. W. Gilman Thompson describes three cases of tyfoid fever after inoculation, and says of one that:

"She was very il on admission with typical symptoms of tyfoid fever, and a temperature which reacht 105 degrees F. daily for eight days, when she died with hyperpyrexia (106 deg. F.), nefritis, and pulmonary edema."

The Berlin Letter, page 544, *The Journal of the American Medical Association,* August 7, 1915, refers to anti-tyfoid vaccination as follows:

"It is interesting that in those suspected of tuberculosis or with bronchitis, the reaction was more pronounst and expectoration increast."

In the "Abstract of Discussion" of an address by Wilbur A. Sawyer, M.D., Director of the Hygienic Laboratory, deliverd before the Annual Session of the A. M. A., 1915, publisht in the *Journal of the A. M. A.,* October 23, 1915, page 1417, which followd Dr. Sawyer's address, Dr. George E. Ebright said, referring to his experience with tuberculous persons:

"I am very loth to giv anti-tyfoid vaccine to a person with the least degree of activ tuberculosis. I hav seen three cases in which the reaction was unusually severe in comparison with non-tuberculous people."

In *American Medicine,* June, 1914, it is editorially said that, "Tuberculosis following anti-tyfoid vaccination has been reported sufficiently often to be accepted as a fact."

In the *Progres Medical,* Paris, in an article on "Pulmonary Tuberculosis and the War" (see *The Journal of the American Medical Association,* September 1, 1917), it is said that, "In two cases there was spitting of blood after anti-tyfoid vaccination, and a typical tuberculous neumonia developt."

A report in the *British Medical Journal,* for November 14, 1914, page 854, says:

"A British doctor in a French town, says: 'Dr. Goddard has just vaccinated several hundred men against tyfoid. Of 200 men between the ages of 20 and 25, only one complaind of serious symptoms. Quite otherwise with conservists between 25 and 35 years of age, of whom fully 60 per cent. wer quite il, with temperature as high as 39.5 C. So markt was the reaction, local and general, that he thot it inadvizable to inoculate any of the territorial soldiers over 35 years of age.' "

I quote from the report of Major-General Georgas to the Chief of Staf on his inspection of Camp Wheeler at Macon, Georgia:

"In my recent inspection of Camp Wheeler, I found conditions as had been indicated by reports. There had been such an epidemic of measls, some 3,000 cases, and, as always occurs with measls, a certain number of cases of neumonia. At the time of my visit there wer some 700 cases of neumonia in the hospital. In the last month there hav been about sixty deths from neumonia.

"A large proportion of the cases of neumonia wer evidently contracted cases, and I am anxious on this score, fearing that we may be beginning here an epidemic of septic

neumonia. We hav had a few cases of meningitis, a few cases of scarlet fever and some cases of mumps."

Dr. James L. Leake, of the U. S. Helth Servis, says in the *Journal of the A. M. A.*:

"It would be invidious to indicate examples, but a great part of the unqualifiedly favorable communications on vaccine therapy, reporting uniform benefit, without severe reaction, bear internal evidence of lack of careful control, and, as a rule, the more favorable the report, the greater is this evidence."

And, further, he says: "The experiments of such clinicians as Dr. Billings, who has had the most expert assistance and advice, with parallel serologic studies, is more important than the mere numerical summary of the overburdened and much vaunted favorable literature on specific therapy. After years of trial, especially in cronic disorders, which should offer the most favorable field, Dr. Billings says that a personal and general hygienic management wil accomplish quite as much without as with vaccines and that vaccines without proper attention to hygienic management, ar more likely to be harmful than helpful."

The *A. M. A. Journal* says, in a long editorial on the subject: "The history of commercial vaccines is not creditable to many medical and scientific journals."

In view of the foregoing, some pertinent questions might be askt. The first, and to us the most important, is: "What relation is there, with a view to cause and effect, between the universal anti-tyfoid vaccination of our helthy young soldiers, and the prevalence among them of measls and neumonia.

The symptoms observd in so many of the vaccinated ar similar to urticaria and measls. Why should an epidemic of measls break out in a camp of the helthiest young men of our country? They wer selected because of the approximate perfection of their fysical condition; their natural powers of resistance against disease wer as near to par as possible. The hygienic conditions wer of the best. It could not be said inclemency of the wether was the cause. The camp is in the "Sunny South." Is it not suggestiv that the known and generally acknowledged pathologic effects produced by anti-tyfoid vaccination on the skin and respiratory organs ar very similar to measls, tuberculosis and neumonia?

The only way to convincingly allay the suspicion in my mind, would be to divide a camp into halvs, both halvs to be made as nearly identical as possible; then vaccinate one-half and leave the other unvaccinated, and watch results, not only as to tyfoid, but the general helth. My bet would be placed on the unvaccinated half! The results of such an experiment would be unquestionable, and might be of incalculable importance and benefit. There could be no question of the completeness of the "control" with one-half of the camp acting in that capacity. Surely some such experiment should be made. The serious importance of the matter not only warrants it, but demands it.

Just think of it! 3,000 cases of measls, 700 cases of neumonia, in the hospital at one time! And sixty deths! And this in only one camp! A dispatch from Chicago, dated December 5th, says:

"Fifteen hundred Jackies at the Great Lakes Naval Training Station ar in quarantine as a result of six cases of spinal meningitis which hav develop there."

A Washington dispatch of December 5th, says: "Altho helthy conditions generally in the National Army and National Gard camps showd improvement during the week ending November 30, the number of deths materially increast. The report of the division of field sanitation, made public today, shows that there wer 164 deths among the Gardsmen, as compared with 97 the previous week, and 79 among the draft men, as against 60 of the preceding week. One hundred and thirty-four of the Gardsmen and thirty-nine of the draft men died from neumonia and nine of the former and fifteen of the latter died from meningitis."

Does it not occur to you as rather strange that so many of those fine young men, living a most sanitary and regular life, should be attackt by such diseases as meningitis and neumonia? It certainly is unusual, to say the least. One naturally asks himself: "Is there any relationship, as cause and effect, between this unfortunate happening and the anti-tyfoid and anti-diftheritic vaccination?"

As germane to this question it is pertinent further to ask: "Why is it that all constitutional, or so-cald blood diseases, which ar not causd nor directly affected by unhygienic influences, hav stedily and alarmingly increast since vaccine therapy has been in vogue (I mean such diseases as leprosy, cancer and tuberculosis), while during the same

period all contagious diseases, which ar causd by unhygienic living, hav been practically eliminated by sanitation?"

These ar questions worth pondering over ernestly and without prejudis. In this connection the following extract from the *Rangoon Mail* may be of interest:

"A surprising thing has happend in the East. Doctors there ar refusing to vaccinate people coming into Rangoon. The *Rangoon Mail* prints a memorial signd by 17 medical graduates (of European and Indian Universities) and practitioners of Rangoon against enforst vaccination of laborers coming to that province from India.

"The memorial says in part: 'It is our opinion that all such persons ar not fit subjects for vaccination on arrival in port. Vaccinations performd on unhelthy, delicate, and famisht persons prove sometimes dangerous to their helth, and life. Even when vaccination is performd with good lymf under all favorable conditions, a number of cases of pyrexia, erysipelas, skin-eruptions, axillary buboes with high fever, leading sometimes to suppuration, showing definit signs of stafylococcic infection occur. Is it possible to observ the same antiseptic tecnic and to secure uniformly good lymf for large masses of people that sometimes arrive in Rangoon? *There ar many ways by which even the best vaccine lymf gets contaminated, which becomes the source of other diseases from which the vaccinated persons would hav otherwise remaind immune.*'"

Now if we admit that the introduction of vaccines into the circulation of helthy subjects accomplishes the ostensible object, it is pertinent to ask: "Is there possibly a safer and equally effectiv mode of administration?" Experiments conducted by the faculty of the Homeopathic Department of the Iowa University at Iowa City, proved to their satisfaction that administration of the vaccine by the mouth was as effectiv for good as when done by inoculation, and that no il effects followd.

But, probably because the experiments wer made and the results proclaimd by Homeopathic (or, more accurately, non-A. M. A. physicians), their findings wer given little attention, even by their nominal friends and colleags; and wer laft to scorn by their enemies. But the following quotation from the *Medical Council* shows that others ar investigating along the same line:

Administration of Tuberculin and Other Bacterial Vaccines by Mouth

"It is our desire to keep our readers informd of the progress that is made from time to time by the patient laboratory workers in solving the great problems of bacteriology and their relations to the treatment of disease. The most important contribution we hav observd lately is the one of which we giv below a pretty ful abstract, as it indicates the approach of a practical method of employing bacterial vaccines by the general practising physician.

"Latham, Spitta, and Inman hav recently publisht the results of their conjoind reserches undertaken to ascertain the value of bacterial vaccines when administerd by the mouth. These investigations wer commenst last November at St. George's Hospital, where several opsonic determinations wer made by Doctor Spitta. In many cases a daily determination was made; in some the opsonic index was taken twice a day. At the end of three months a considerable amount of information was obtaind, and patients wer then treated at the Brompton Hospital for Consumption. At this hospital the patients wer seen by Doctor Latham daily, and sometimes twice daily, in consultation with Doctor Inman, who made 800 to 900 opsonic determinations. In a great majority of cases the treatment by vaccines was determind on purely clinical data and without reference to the opsonic index.

"The paper is illustrated with thirty-seven charts. The authors cald the attention to the observation of Calmette and others who had shown that there is presumptiv evidence that many cases of pulmonary tuberculosis owe their origin to the absorption of living bacilli from the alimentary canal. They state: 'It is a fact that the body is capable of acquiring immunity by utilizing in some obscure way the bodies of ded bacilli. It is therefore probable that many persons owe their immunity to tuberculosis and other infectious diseases to the fact that living bacilli, after being absorbd by the alimentary canal and kild, hav stimulated the production of anti-bodies.

" 'It seemd a reasonable assumption that the administration of ded tubercle bacilli or of their products (tuberculin) by the mouth would enable the body to become immunized against the attack of living bacilli. This conclus-

sion was strengthend when, some two months after this investigation was commenst, Calmette, Guerin, and Breton publisht a paper showing that the administration of specially prepared emulsions of ded tubercle bacilli by the mouth conferd immunity upon guinea-pigs, provided that the emulsion was not given with food.

" 'Koch stated many years ago that tuberculin administerd by the mouth would not confer immunity. A number of observers, however, hav given tuberculin by the mouth, and some of them with good results. Others hav administered it in the shape of suppositories, and Spengler has rubd it into the skin. So far as the administration by the mouth is concernd, nearly all observers gave tuberculin in the form of capsules or keratin-coated pils. The results obtaind do not appear to have been sufficiently striking to induce a continuance of the method. This is probably due to the fact that such methods of administration hinder the proper absorption of the vaccine. In the case of snake poisons the venom is unaffected by the gastric juice, but is destroyd by the pancreatic juice. Most forms of venom can be given by the mouth without any harmful results, and an interesting point arises as to the part playd by the liver after the absorption of the venom from the stomac. Again, Copeman has shown that vaccine crusts, when given by the mouth to vaccinate against smallpox, hav produced a general vaccina.

" 'I argued that in all probability vaccines would be absorbd from the stomac if they wer given when the stomac was empty and together with some substance which would facilitate absorption, and that if they wer absorbd they would necessarily confer immunity.'

"The limits of this abstract wil not permit anything more than a brief commentary in relation to Doctor Latham's cases. Those of stafylococcic infection comprise boils in which doses of 100,000,000 of kild stafylococci in 10 c.c. of fresh horse serum wer given by the mouth. In another case 250,000,000 of the patient's own stafylococci, prepared from one of the boils, wer given. The effects wer immediate and brilliant. In the cases of mixt infection 1/1,000 mg. of tuberculin was given by the mouth in 10 c.c. of horse serum and effects of the vaccine wer very markt. In another case doses of 100,000,000 of stafylococci, combined with 1/1,000 mg. tuberculin and 10 c.c. of horse serum, wer administerd. The effects wer satisfactory.

"One of the interesting statements is that serum rash followd the administration of serum and stafylococci, and in one case urticaria followd the oral administrations of tuberculin in normal saline solution. The patient suffering from pulmonary tuberculosis, together with tuberculous infection of the glands, was treated at first with serum and tuberculin, and later with tuberculin in saline solution, the doses varying from 1/10,000 to 1/1,000 mg. On several occasions three doses of 1/3,000 mg. wer given at twelv-hour intervals with good results.

"In a case of tuberculous peritonitis the administration of tuberculin by the mouth was tried without result. Tuberculin 1/1,000 mg., in horse serum, was then administerd on two successiv days by the rectum, with immediate effect, and similar doses wer given subsequently. The fluid in the abdomen was rapidly absorbd, and at the end of a fortnight's treatment had disappeard. Immediately after the administration of the tuberculin with serum on the second two days the temperature became normal and remaind normal or sub-normal. The patient was discharged after one month's treatment by the administration of tuberculin by the rectum, and is now in perfect helth. In another case of tuberculous peritonitis treated by tuberculin and serum by the rectum equally good results wer obtaind.

"At St. George's Hospital six cases of pulmonary tuberculosis hav been treated so far. All ar examples of activ and extensiv disease, which had faild to react to ordinary treatment. In all, with one exception, considerable fever was present before treatment was commenst; in all the temperature is now normal; four of the patients ar up and about; in the case of one of the other patients the treatment has not continued sufficiently long to allow improvement; in the remaining case the patient has been up and about, with a normal temperature, but on doing too much he sufferd from a return of the fever, and altho the temperature is again normal, he has not yet been allowd to get up again. In the cases in which expectoration persists, tubercle bacilli ar stil present.

"In no case has there been any extension of the disease, so far as is shown by the fysical signs, since the treatment commenst. In such cases rapid results cannot be expected, and treatment must necessarily be prolongd; but I am satisfied that even in this hopeless class of cases, tuberculin judiciously administerd, is capable of producing consider-

able amelioration. In view of the results obtaind, it is our intention to treat less severe cases on similar lines.

"The two examples of neumococcic infection ar given to show that the administration of neumococcic vaccine, even stock neumococcic vaccine, by the mouth has a definit effect upon the temperature in neumonia. One hundred millions of stock neumococci in 20 c.c. of serum wer given in one case. One-half of that dose was given in the other case. The doses wer not repeated, so far as the record is given. The authors state that probably better results would hav been obtaind by the administration of somewhat larger doses in normal saline solution.

"Under the hed, 'Effects of tuberculin R. when administerd by the mouth,' the authors state that it produces practically the same results as when it is injected into the skin. That it is absorbd satisfactorily is shown by the fact that the smallest dose given in this investigation produced an immediate rise in the opsonic content of the blood. This dose was 1/20,000 mg., which in reality represents 1/100,000 mg., or 1/100,000,000 gm. Administerd in this way tuberculin stimulates the production of anti-bodies, and so raises the opsonic content of the blood and confers immunity.

"Simultaneously with the improvement in the immunity curv produced by tuberculin occurs improvement in the patient's condition. The temperature falls, the cof becomes less troublesome, expectoration is greatly diminisht, and the patient has a feeling of wel-being.

"Referring to the effect of stafylococci and streptococci and other vaccines when administerd by the mouth, the author states that 'The same clinical effects ar produced as when the hypodermic method is employd. It is probable that the duration of both the positiv and the negativ fase is somewhat shorter when the vaccine is given by the mouth. The dose of tuberculin by the mouth should always be given on an empty stomac. It is probably best given in the morning, when resistance is highest, and should be given with something which aids its absorption. I hav given it in normal saline solution and in horse serum, and in such cases had added, as a rule, a little milk.'

"It is possible that 1/1,000 mg. of tuberculin by the mouth represents 1/2,000 mg. or less when given by the skin. On the other hand, it is possible that tuberculin is absorbd more quickly thru the stomac, and that the more

markt fases following hypodermic administration may be due to a slower and more 'sustaind' absorption. Whether given by the mouth or under the skin, the administration of tuberculin requires the most careful judgment and precise watchfulness of the patient's condition and of his symptoms, more especially of the temperature. It is possible to cause infinit harm by an overdose or by too frequent doses. Careless or excessiv dosage may be attended with fatal results. The abuse of tuberculin and the disregard for these points at the hands of the profession in former years led to its disuse and set the clock of medicin back for nearly twenty years. On the other hand, the careful administration of tuberculin, whether by the mouth or the skin, givs brilliant results."

Hav we not sufficient evidence here in support of the experience of the Iowa conclusions to warrant the adoption of the ORAL *methods? It is a much more safe way, because the normal secretions of the digestiv tract wil take care of all extraneous impurities which might hav been introduced into the vaccine.*

CONCLUSION TO PART SEVEN

From the humanitarian standpoint, I consider PART SEVEN one of the most important parts of this book. This Part Seven is all the more important because it is fighting against superstition, and not only superstition, but commercialism, because there is an amount of commercialism back of vaccination and vivisection that the casual reader cannot realize.

In closing this part, I want to call attention to the great fight Mr. Winfield Scott Ensign of Battle Creek, Michigan, is making for the good of humanity thru his publication, "THE TRUTH TELLER." Every physician who wants to know the truth of some of these superstitions and diabolical doctrins should help along the altruistic work that Mr. Ensign is doing by subscribing to his paper and reading it every month. Mr. Ensign has a radical way of saying what he wants to say, but he knows just what rocks he has to crack and he uses sledge-hammer blows to crack them. I hav never met Mr. Ensign but I know from his writings that he must be one who fears not the medical politicians who ar trying in every way to deceive the medical profession at large

as wel as the public regarding vivisection and vaccine therapy.

I also want to express my admiration for the work done by the *National Anti-Vivisection Leag* or the *National Anti-Vivisection Society* or the *New York Anti-Vivisection Society* for the great work they ar doing for humanity. I say HUMANITY because anyone who tries to protect the dum animals is aiding humanity in a more effectiv way than one at first thot realizes. As soon as a human being becomes callust to the feelings of dum animals, they also become callust to the feelings of their own kind.

The "OPEN DOOR" is the *National Anti-Vivisection and Animal Magazine,* and every physician or layman who subscribes for that magazine and reads it is helping promulgate a great humanitarian work.

Thruout the United States, MEDICAL FREEDOM LEAGS ar being establisht. These Leags hav the following platform:

"Opposed to Compulsory Vaccination."

"Supporting the Principle of Medical Freedom."

"Opposing State Medicin."

Every liberty loving physician and layman should support such Leags.

Just at present physicians do not realize what an octopus is growing in the shape of State Medicin or Political Medicin. It is thrusting its tentacles at the very throats of liberty and is trying in a sutl manner to establish a *national medical oligarchy* that would crush everyone who dares oppose its narrow, slavish, commercial policies.

The underlying principles of this *medical octopus* ar no better than that of the poisonous, gas-killing, German Kultur. Their methods ar almost identical. *Rule or ruin* is their motto and they respect neither one's body nor one's home.

Politics and Commercialism ar warping some of our time-honord medical organizations.

Under the cover of a "war mesure," Medical Kultur is being waged against honest criticism. Honest criticism can never harm any one, but hypocritical silence is a sign of weakness and cowardis, so cannot be American.

To me, a Yankee born, and bred from the landing of the Pilgrims, any system or method that tends to injure American Efficiency, is delaying our triumfant entry into the Harbor of Universal Democracy.

PART EIGHT

THE SMOKING HABIT.

We hear a good deal about legislation to prohibit the promiscuous sale of morfin, cocain, etc. We read of the terrible ravages of opium. Very seldom, however, is it mentiond in the popular press that the *dope habit* in nearly nine cases out of ten is contracted by following out the old, "allopathic methods" of treatment.

I do not by any means intend to infer that all "allopaths" promiscuously prescribe opium in various forms, but we know that in many medical scools we ar taut to giv opium for almost everything. At least that used to be the plan, and where drug therapy is taut opium stil holds one of the first places. This is a crime against nature and it is one of the potent reasons why old style allopathic therapy is waning and why it requires politics, lobbyists, henchmen, etc., to keep this style of drugging in vogue.

Every physician has seen patients who ar addicts to opium in some form or, if not opium, to some substitute. I could fil a book with what I hav seen and know regarding the effects of opium and other narcotics, but there is no need of dwelling on that. However, all progressiv physicians who really believe in helping humanity should wake up, remove the masks from our political doctors' faces and show the hideous demons that ar behind them.

Making a drug fiend is a hundred times worse than murdering a person.

Altho mesures instigated by the people hav been brot about to curtail the opium habit, or I might say to curtail the *supply* of the poor unfortunates of opium and other habit-forming drugs, thru some miscarriages of justis we ar at the present time in an atmosfere of TOBACCO SMOKE. Little by little public opinion was forcing legislature to make laws to regulate the sale of cigarets which is one of the most dedly dope habit-forming missils. But suddenly, as lightning from a clear sky, we find the public press, as a rule, being led by some sinister power to make cigaret smoking

a "war mesure." This promiscuous free advertising has been promulgated thruout the land by what *seems* to be "alien influence," camouflaging in the guise of efficiency. It has even gone so far as to urge our recruits to begin the smoking habit. Anyone can find this out by asking some non-smoker in the army camps. I really believe that many people hav been so affected by this great war calamity that their minds hav been unduly turnd and they ar not rational in many respects. Never could this propaganda for encouraging cigaret smoking hav been thrust upon the people so suddenly except under the *stress of hysteria.*

To strengthen our belief that this is an alien plot to weaken efficiency in our soldiers, especially the younger class, just when the greatest publicity for cigarets in the army cantonments broke forth samples of a certain brand of cigarets wer sent broadcast to nearly every physician. About the same time public press notises made the remark that if anyone had cigarets donated to them which they could not use to turn them in for "army cantonment donations." It does not seem as tho it would take a Conan Doyle to ferret out the underlying motiv to popularize smoking of cigarets at our army cantonments. The enemy knows that *efficiency spels victory* and if the efficiency of our young men can be lowerd in any way, it means just so much leverage in their behalf.

There is hardly a physician of a clear mind, not polluted with tobacco, but that has in mind more than one person who has gone to his grave thru the use of *Nicotin.* I hav seen bright, wel-educated professors, who in college had become addicted to the use of cigarets, go to an untimely grave from the effects of nicotin poisoning. I hav seen medical students go into college with a clean mouth and high aspirations, only to close their third or fourth year so addicted to the use of cigarets that their usefulness had been ruind. Some wil say: Why is it so many of the medical profession use tobacco if it is such a poison? They might ask why so many physicians ar addicted to opium. They start in, believing that *they* ar different from others and that *they* can be their own master, but like the thief that works in the dark, nicotin takes such a hold upon its victim that he loses control of himself, and what was once a mind of good judgment is turnd into a mind befogd by nicotin.

I remember a German importer who traded a great deal in Cuba. He came to me asking if I could diagnose his

throat trouble. It did not take long to see that he had a cancerous condition of the tung and throat. I askt him if he had not been to other physicians to hav his trouble diagnosed. He said he had been to the very best diagnosticians in some of our large cities, but they had cald the condition something else.

I askt him how many cigars he smoked a day and he said he did not know because, being an importer of the very best Havana cigars, he knew they could not hurt him and began smoking when he got out of bed and allowd only eating to interfere with the pastime. I askt him to tel me the different physicians he had been to, and I lernd that every one was a smoker. Do you suppose they would tel him that his cigars wer harming him? He said not one had cautiond him about the use of tobacco. In fact, he had treated them to one or more of his favorit brand. Some may say that this is an exceptional case, but I can say that *no dope fiend of any kind can intelligently advize anyone else addicted to the same habit.* They may *try* to, but the dope has changed them.

Nicotin, as wel as dope of all kinds slowly, but surely affects the mind. This has been and can be easily proved.

The use of Nicotin, especially in the form of cigarets, leads to degeneracy.

I wel remember the case of a very prominent physician in New York City who came to me for diagnosis. I told him that tobacco was killing him and unless he stopt he would die within twelv months. He laft at the idea, remarking that he smoked only the "best brand" and tobacco never hurt anybody if they used the right kind. I told him he need not leave it for his widow to pick out his coffin as he could just as wel do it, for he was committing suicide slowly and would be ded inside of a year. He went away laffing, but in about a month he returnd and askt me to examin his hart, blood vessels, etc., again. I told him that he had only ten months to liv as his blood pressure was soaring. Again he laft and I askt him why he came to me if he did not believe what I said. He replied that somehow he felt that I was right, but he did not know how to get out of the clutches of Nicotin.

In another month he came in again and I told him he had only eight months to liv. This did not seem to wake him up, or else his senses wer so benumd by nicotin that he could not wake up. The next time he came I told him that

I expected to hear of his deth any day. Three months from that time I receivd a telefone message in the night, asking if I would go to see this physician and see if anything could be done for him as he was apparently ded. It was too late, as *he was ded.*

Smokers wil say this is an exaggerated case but I could tel any number of such cases. Perhaps it is because I hav always fought tobacco as I would a bomb. *It is a dope,* and any dope should be condemd by every honest worker for the good of humanity. I hav made very many scientific tests by laboratory instruments to prove the baneful effect of nicotin upon the system. I hav seen and recorded the elevation of blood pressure 40 mm. of mercury in a habitual smoker after smoking one of "the best Havana cigars."

Many wil say that they know of different ones who livd to a "good old age" altho they used tobacco since they wer twelv years old. Yes, and I can tel of men and women who hav livd to be over one hundred who hav been habitual drunkards. It is like the man who wins a lottery ticket. We hear of the one man who wins, but we do not hear of the thousands who lose all they put in.

If you ar an addict to tobacco, do not think that it is not hurting you or anyone else. Try to abstain from the use of tobacco for one month and you wil hav a very fair idea of the slave that you hav become. Do not say that "it helps to stedy the nervs." Any drug that helps to stedy the nervs" only makes them more unstedy. Not only does tobacco influence the *user,* but it influences his *offspring.*

I can cite one case in particular of a man who bot only "the best cigars." He sent his wife to me for diagnosis. I found that she had a deep seated neurotic condition, and lernd that tobacco smoke in the house was the beginning cause of her condition. She said she did not like to find any fault with her husband for fear he would go to some club to smoke. I spoke to her husband and told him how loyal his wife was, but he said he did not think tobacco ever hurt him and doctors said it was a "disinfectant," and he could not see why he should be deprived of his "only bad habit."

Soon there was a boy born into their family. I told the father that he should not set the example of smoking before this boy and that it was bad to hav the smoke in the room where the baby was. Altho he was a kind husband and father, he would not stop his smoking wherever he

wisht. The boy grew up with peculiar tendencies and the father would thrash him for smoking cigarets, but he, himself, persisted in smoking. The son is now an inmate of one of our State prisons and the wife fild an untimely grave. Now the father says he realizes I told the truth as he too, is a fysical and *mental* wreck from tobacco.

Fellow physician, why not "call a spade a spade" and if you know, as you surely do, that tobacco is injurious to everyone, why not try to educate people not to use it. Begin with yourself and see how much more clearly and better you look at things. If you hav gone "too far" and must be a slave to Nicotin the rest of your days, then by all means it is your duty to try to educate others to escape the nicotin path in which you ar traveling.

To giv my readers some idea of what others ar saying and thinking regarding this great foe of all soldiers (we ar all soldiers in life's battle), I want to ad here an excellent editorial which appeard in the December, 1917, Good Health. This article is from the pen of John Harvey Kellogg, M.D., L.L.D., Director of the Battle Creek Sanitarium. What he says is true and more than true. I am then going to ad the report from a fysical culture institution in New York. After you hav red these carefully, stop and think just what nicotin is doing to undermine the people. And men ar not the only ones who ar using tobacco. I regret to say that more women ar smoking cigarets today than anyone has any idea of. Women who go in good society and who ar to all appearances refined and educated say they see no reason why *they* should not enjoy the pastime as wel as their brothers. Some of these women ar workers in society and in some of our socities which ar formd to help the soldiers. Perhaps you can infer why certain organizations hav so suddenly taken up the idea that cigarets ar an aid rather than a curse to our "soldier boys." There is an underlying influence back of it all and the sooner it is dug out and kild, the better.

The following is Dr. Kellogg's article:

In previous great wars in modern times the chief cause of deth has not been bullets or exploding shels but camp diseases due to insanitary conditions. In the Spanish-American War tyfoid fever and other camp diseases kild fifteen times as many soldiers as Spanish bullets. The application of modern scientific methods has almost abolisht camp diseases. The up-to-date military hygiene which is being applied to the life of the soldier of today really places him under hygienic conditions in many respects far superior to those which he enjoys at home. His profession of course is a hazardous one. According to recent authority on military statistics it appears that the deth rate of the soldier at the front from all causes is about three per cent. per annum or thirty a thousand. This is a little less than four times the deth rate of men of the same ages at home which is eight a thousand. Very few of these deths can be attributed to insanitary conditions, but there is good reason to believe that not a few of them ar due to the baneful influences of the cigaret. Thru a conspiracy of kindness the soldiers not only at the front but those gatherd in cantonments ar being flooded with cigarets and not only permitted to smoke *ad libitum*, but actually urged and encouraged to do so.

If an agent of Germany should be discoverd in the act of mingling with the drinking water or the daily food of the soldier the minutest quantities of a poison one-tenth as virulent as nicotin he would be dispatcht in a most summary manner and another heinous crime would be charged to the account of our enemy. We hav herd something about the poisoning of wels by the Germans, the use of poisonous gases and most elaborate precautions hav been taken to gard the soldiers against these deth-dealing agents while at the same time they ar deluging the soldier with nicotin, one of the most dedly poisons known. Nothing could possibly be more unscientific or absurd from the hygienic standpoint than the encouragement of smoking by soldiers. Insted, *smoking should be prohibited.*

Why is the soldier kept for months under training before he is sent to the front? It is not simply to teach him military tactics, to train him how to aim a rifle or to thrust a bayonet. The most important thing accomplisht for the soldier is improvement of his fysique. He is put thru vigorous gymnastics, drild for hours every day and is made to take hikes of increasing length and difficulty. The pur-

pose of training is to develop his muscles and particularly to develop his hart so that he wil be able to endure the strenuous work required of him at the front. The greatest care is taken to furnish him simple and wholesome food, to make his digestion sound, to increase his breathing power and in every way to bild up his powers of vital resistance and endurance. How does the cigaret fit into this program? It servs as a tremendous backsetting influence. Its effects upon the soldier ar precisely the opposit to those which his training is desired to accomplish. There is no guesswork about this. Dr. Monford, Professor of Fysiology of the University of Michigan, and numerous other scientific men hav made careful studies of the fysiologic effects of tobacco upon the body and definitly demonstrated the following facts:

First, tobacco lessens muscular power. This fact has been so wel establisht that for a whole generation men in training for fysical encounters, for contests of various sorts —boxing, rowing, base ball, foot ball, running—while under training for the supreme tests of their powers, ar invariably forbidden to use tobacco. The professional runner knows that a single cigar wil so weaken his hart as to insure failure. Athletes who smoke and drink in the intervals between training periods soon lose their standing and yield their places to others, like Jesse Willard, who never smoke and so ar always in fine condition.

Tobacco is a hart poison. There is no poison known which wil more quickly paralyze the hart and damage it irreparably than wil nicotin. A frog's hart removed from its body wil continue to beat about twenty-four hours or even longer when kept under favorable conditions, but if a small fraction of a drop of nicotin is injected under the skin of a frog or introduced into its stomac, its hart within a few seconds wil forever cease to beat. A minute dose of nicotin wil kil a frog quicker than the cutting off of its hed.

Smoking tobacco is a lung poison and smoking especially weakens lung action. Dr. Seaver of Yale proved years ago that under right conditions the lungs of non-smokers increast in capacity 50% more than did that of smokers. Great cigaret smokers ar always short winded.

A non-smoking military man informd the writer recently that when out with a company of soldiers on a hike he observd that the smokers wer always the first to fall out by the wayside. The writer was recently informd by a

medical offiser in the regular army (a man who holds the rank of Colonel and who himself is not a smoker) that smoking is far less common among military *offisers* especially medical offisers, than in former times; that an increasingly large number of army medical offisers recognize the evil effects of smoking upon efficiency and hav abandond the use of tobacco.

But our most serious charge against tobacco is based upon the fact that it enormously lowers vital resistance. Berdin and other eminent French investigators proved years ago that nicotin very greatly reduces vital resistance. Pigeons that ar normally immune to anthrax, a terribly infectious disease, immediately succum to it after having been given very small doses of nicotin. The investigations of the Phipps Institute of Philadelphia carried on so many years, hav demonstrated that smokers ar twice as susceptible to tuberculosis as non-smokers. Post-mortem examinations made in hundreds of cases of persons who died of tuberculosis showd the reason for this.

Tuberculous patients comparativly seldom die from loss of lung tissue. The real cause of deth is cronic poisoning resulting from continued absorption of the specific poisons produced by the tubercular germ. The kidney eliminates these poisons and in so doing is damaged by them. The consumptiv ordinarily livs as long as his kidneys ar able to keep his body sufficiently free from these tubercular poisons to make life possible.

The pathologist of Phipps Institute showd that the kidneys ar worn out and diseasd in 86% of all cases of persons dying from tuberculosis. Nicotin produces the same effects upon the kidneys that ar produced by the poisons of the tubercle germs. It is plain then why smokers ar twice as susceptible to tuberculous diseases as non-smokers. Smokers who become infected with tuberculosis hav only half as good a chance for recovery as non-smokers. Recently the appalling fact has been brot to light that of all the soldiers sent back from the front as incapacitated, 25% ar broken down by tuberculous disease.

A medical offiser just back from the front told the writer that so many of these poor fellows wer hopelessly diseasd that they wer sent back to the front with the idea that it would be better for them to be kild by German bullets than to die by the slow torture of tuberculosis.

Two causes ar recognized as activ in producing this extraordinary prevalence of tuberculous disease among the French soldiers.

First, the very prevalence of tuberculosis thruout France where no effort has been made to arrest the ravages of this great plague.

Second, the special hardships to which the soldier is subjected in the trenches.

In the writer's opinion a third factor, more important than either one of those mentiond is the unrestricted indulgence in cigaret smoking which seems to be rapidly becoming universal among the soldiers at the front.

Why should the soldier be encouraged to indulge in a practis which can hav no other possible effect upon him than to neutralize in a most effectiv manner all of the special mesures brot to bear upon him for the purpose of giving him superior fortitude, strength, endurance, vigor, keenness of mind, stediness of nerv, alertness and every other quality needed at the critical moment when the supreme effort of all his powers wil be demanded?

Nicotin weakens the hart, lessens endurance, diminishes breathing capacity, benums the sensibilities, impairs the eyesight, stupefies the brain and depreciates every mental, fysical and vital power of the man.

In the writer's opinion Nicotin is at the present moment the American soldier's most dedly foe.

No medical man, no man who is familiar with the findings of science in relation to the effect of tobacco on the human body wil undertake to contradict a single one of the facts abov presented. The only argument offerd in favor of the encouragement of the use of tobacco by soldiers is the hardships to which the soldier is subjected in the trenches.

The soldier is deprest. He needs solace. He smokes and is comforted. He is lonely and homesick. The cigaret benums his moral sensibilities and so is a solace to him in his isolation. The soldier is cold and hungry. He smokes and in so doing blunts his sensibilities and is better able to endure his discomfort, but all these effects ar simply the *effects of a narcotic.* Why not giv him some other drugs which afford more comfort with less fysical damage.

This argument for the cigaret altho the only one which has been offerd in its behalf is anything but convincing to one who has given the matter a moment's thot. Does not the soldier in the trenches, the man who is nearest to the

foe, need to be keenly alive to his situation and to be in ful possession of all the splendid fysical powers which it is the chief aim of his long and laborious training to develop in him?

The claim that the soldier needs the solace of the cigaret that it wil take the edge off the trials and hardships of the trench is merely an excuse and a sentimental one at that. If the cigaret is really needed for this purpose the soldier's smoking should be confined to the trenches for the more he smokes before he gets into the trench the less comfort he wil derive from smoking after he reaches the trench. Medicins to be efficient should be used only on occasion and not habitually.

Certainly the argument for smoking in the trench does not apply to smoking in the cantonment where cigaret smoking is permitted without restraint. If prize fighters, wrestlers, foot ball players, sprinters and athletes of every other sort find it impossible to get into condition for their best efforts while using tobacco, the same must be true of the soldier. The direct aim and purpose of the large part of the training he receivs is to make a good all-round athlete of him. This cannot possibly be done so long as he is a slave to the baneful cigaret.

Just now every patriotic American is keenly awake to the necessity for defending our country against its foes. One of the most insidious and dedly of these foes to which the civilians as wel as soldiers ar exposed is the TOBACCO HABIT which has been growing with tremendous strides within the last two decades. Inquiry would probably discover that the present movement thruout the country having for its purpose the raising of funds to supply the soldier with cigarets was set going and is being carefully nurst by the Tobacco Trust which tho supposed to hav been kild is really alive and doing business in a more insidious form than ever.

(*Dr. Kellogg further remarks regarding cigarets in the January issue of "Good Health" as follows*):

A German Ally in the American Trenches

Anything that weakens the American soldier, that lessens his efficiency, helps the enemy.

The cigaret is an ally of Germany.

Every cigaret a soldier smokes does him harm.

Here ar some of the things it does to him:

Cigaret smoking raises the puls rate and the blood pressure and so weakens the hart.

Tobacco is a hart poison. It causes "soldiers' hart."

Smokers ar twice as liable to consumption as non-smokers. Trenches and dugouts ar not helthy places at the best. Smoking doubles the danger.

Smokers ar less accurate in shooting. One smoke cuts down accuracy twenty per cent.

The habitual smoker is shaky and nervous when he can't get his cigaret. In other words, he is "unprepared."

Smoking tends to undo everything that training is intended to do for the soldier.

The cigaret is an ally of Germany.

Why the Athlete Does Not Smoke

The athlete needs a strong hart.

Tobacco is a hart poison, nicotin is nearly as dedly as prussic acid. A drop wil kil a man by paralyzing his hart.

Five minutes smoking raises puls and blood pressure. No athlete smokes when in training.

The athlete needs a good wind.

Smoking weakens the lungs and causes brethlessness. The experts of the Phipps Institute of Philadelphia hav shown that a smoker is twice as liable to consumption as a non-smoker.

The athlete needs sturdy muscles.

Dr. Lombard, of the University of Michigan, and others, hav shown that smoking greatly lessens a man's capacity for muscular effort. A single smoke cuts down a man's muscular power very appreciably.

An athlete needs stedy nervs.

One smoke cuts down a man's accuracy in target practis twenty per cent. Regular smoking impairs the eyesight and weakens the nervs.

A good soldier must be an all-round athlete, hence he should not smoke.

The Cigaret and Tuberculosis

The fact that reserches of the renownd Phipps Institute of Philadelphia prove that smokers assume the double risk of contracting tuberculosis certainly affords just ground for the apprehension exprest by Dr. C. D. Parfitt, the eminent hed of the tuberculosis sanitarium at Gravenhurst, Canada, that the cigaret habit cultivated by the soldier in the trenches wil stand greatly in the way of his recovery.

Dr. Parfitt says: "He" (the soldier) "is likely to be more nervous and irritable than the civilian patient. Very frequently he is restless and despondent, and it is hard for him to get away from the habits of cigaret smoking and so on that the army life has taut him."

Probably no one is better prepared than is Dr. Parfitt to speak authoritativly on the question of the cigaret as an obstacle to recovery from tuberculosis. His long experience as a specialist in the treatment of this disease has made him familiar with the influences which make for recovery and also those which tend in the opposit direction.

Since it is certain that a considerable number of the soldiers, probably not less than ten per cent., wil contract tuberculosis, and wil hav to make a desperate struggle to save their lives, it is evident the effort now being made to furnish the soldier with an ample supply of cigarets wil most certainly tend to increase the deth roll from tuberculosis as wel as from "soldiers' hart" and other grave maladies. These facts should giv us pause before we encourage the cigaret habit.

THE CASE AGAINST SMOKES

By George J. Fisher, M.D.

(In The Independent, December 29, 1917.)

Is it harmful to smoke? Does smoking rest one or does it tend to make a man irritable? What is the effect of a habit which is so general? Does it decrease efficiency? Does it lower vitality? These ar questions I hav tried to find an anser for. No one had in my judgment given an adequate anser to them. I approacht the question dispassionately, for I am not fanatic about the matter. I simply wanted to know the truth so that I would know how to advize young men accurately.

For the past four years I hav had a series of experiments made at the Y. M. C. A. College at Springfield, Massachusetts, under the direction of Prof. Elmer Berry, upon young men between the ages of twenty-one and twenty-five, men of exceptional fysical vigor who wer being traind as fysical directors. The plan in the experiments was to use smokers and non-smokers alike so as to note the effect of smoking on each, to hav them go thru a given test first without smoking and then try the same test after smoking. As a rule we used a single cigar or a cigaret.

In our first experiment we tested the effect of smoking a cigar on the hart rate and blood pressure. A single cigar increast the hart rate and blood pressure. The most significant thing about this experiment was the apparent disturbance to the hart in that it took some considerable time for the hart to return to normal, longer than we could wait to mesure.

In the next experiment a year later we tried to go into this problem further and gave a series of exercizes before and after smoking, taking as before the hart rate. This series of tests reveald as did the others that smokers hav a higher hart rate than non-smokers and that the return to normal after exercize is much delayd after smoking. For illustration, in 74 per cent. the hart rate was increast and did not return to normal in fifteen minutes.

In 72 out of 74 tests in which the men did not smoke fully 97 per cent. *did* return to normal in less than fifteen minutes, the average time being only five minutes. The smoker does not become fully habituated to smoking.

At the same time that the latter test was given some tests in muscular precision wer made by having the men draw lines with a pen on a chart between narrow colums. Every time the sides wer toucht an error was registerd. To test the large muscular co-ordinations the men wer required to lunge at a target with a fencing foil. In these two tests all the men showd a loss in precision. This was a great surprize to us. I did not dream that a single cigar or the smoking of two cigars which wer used in the target thrust would show any appreciable effect.

This led us in our next experiment to make some experiments on the effects of smoking upon baseball pitching. Twelv men, all baseball players, both smokers and non-smokers, wer used. The men in the tests had ten throws at a target which wer recorded. Then each thrower smoked a cigar, taking thirty minutes for the purpose, after which they had ten more throws which wer recorded. In another test the men rested in the thirty minute interval insted of smoking. In another test the men smoked two cigars, using sixty minutes between the throws. In this way it was clearly discoverd what effect resting or smoking one cigar or smoking two cigars had upon accuracy in pitching. An official baseball was used, fast, strait balls wer thrown, the men winding up for the throw as baseball pitchers do.

In Test A, after smoking one cigar, there was a loss of twelv per cent. in accuracy. In Test B, after smoking two cigars, there was a loss of 14½ per cent. In Test C, during which no cigars wer smoked, there was an increase in accuracy of nine per cent., so that the real effect of the smoking should be judged by comparing the scores made after a rest and those after smoking.

We then determind upon a further test of co-ordination and because of the interest in the war we selected rifle shooting. The Wesson Revolver Club Range of Springfield was used and Mr. Wesson furnisht the rifles and ammunition. Five shots at a target twenty yards distant wer fired, then either a rest or smoking was indulged in, then five more shots wer fired. The prone position was used. Five tests wer made in the first test; the men rested thirty minutes between the two periods of shooting. In the second the men smoked one cigar, in the third test two cigars wer used in a period of sixty minutes, in the fourth test two cigarets wer used, in the fifth the men again rested. Briefly the results wer these. In test number one, when the men did not smoke,

they showd an *increase* in accuracy of seven per cent. In the second test, after smoking one cigar, there was a *loss* in accuracy of 4.8 per cent. In the third test, in which the men smoked two cigars, there was a *loss* in accuracy of six per cent. In the fourth experiment, after smoking two cigarets, there was a loss in scoring of 1.8 per cent. In the fifth experiment, in which the men did not smoke, there was a *gain* in accuracy.

These tests which I hav been having made, covering a number of years, ar exceedingly interesting. I do not claim they ar conclusiv.

As far as we hav gone, however, we seem to be compeld to believe that smoking is not beneficial. It quickens the hart rate, affects in slight degree the blood pressure, disturbs the circulatory apparatus so that it takes some considerable time for the hart to return to normal. Smoking affects muscular precision in such fine movements as writing and in such larger movements as lunging at a target with a fencing foil or in baseball pitching and also in rifle shooting.

These experiments wer made upon men twenty-one to twenty-five of unusual fysique, men accustomd to smoking and those unaccustomd; both groups wer affected and in all the experiments there was a remarkable consistency in the caracter of the results obtaind.

The case seems to be against tobacco.

In the light of such facts as these what should be our attitude in furnishing tobacco to soldiers? If smoking disturbs the hart, what effect wil it hav on endurance? If smoking affects accuracy in baseball pitching, what wil be the effect upon bomb throwing? If smoking makes for inaccuracy in lunging at a target, what wil be the effect in lunging at an enemy with a bayonet? And if men, after smoking, do not shoot as wel at twenty yards, what wil be the result at a greater distance?

These experiments wer made in a wel-ventilated place in each instance and after the men had smoked but one or at most two cigars, and two cigars wer more severe than one. Most men do not stop with one or two cigars, but have a tendency toward many in a day.

I am not willing to say that soldiers should not smoke. Those habituated to it seemingly get great comfort from smoking. I do not believe, however, that we should encourage them to smoke incessantly nor incite the young

soldier who has never smoked to indulge. I am wondering whether special funds for tobacco ar wise and I question the wisdom of placing tobacco in *every* comfort kit. We take it for granted some soldiers wil smoke.

By urging soldiers to smoke I believe we ar doing harm.

THE CIGARET A CARBONIC OXID PRODUCER

The Lincoln crusade of the Anti-Cigaret Leag of America in their pamflet No. 2 givs the following:

Inhaling Carbonic Oxid

Nature has more or less fortified the human economy against the intrusion and the effects of poisons, however virulent, with which we habitually come in contact. Thus it is that poisons we encounter in a state of nature ar not as insidious or pernicious as those that ar the products of civilization. Carbonic acid gas is a poison, but it is an ingredient of the common air and we ar used to it. We exhale carbonic acid gas with every breth as one of the products of combustion of carbon with oxygen in the blood. But the system has no acquaintance with carbonic oxid and has no defenses against the insidious enemy. Taken into the lungs, it enters the blood with which it reacts and which it disintegrates. The blood of persons poisond by the inhalation of illuminating gas, rich in carbonic oxid, is found to be coagulated and indurated and may be puld in strings from the veins and arteries.

Owing to the loose structure of the cigaret, its combustion is modified and destructiv distillation procedes with combustion, and owing to the incompleteness of oxidation, carbonic oxid is largely produced insted of carbonic acid. This carbonic oxid inhaled into the lungs enters the blood unresisted and the damage it does is in direct proportion to the quantities inhaled. Carbonic oxid when inhaled in small quantities produces faintness, dizziness, palpitation of the hart, and a feeling of great heviness in the feet and legs. These ar exactly the effects of the cigaret and the depression and nervousness which follow as a reaction make the victim crave some balm or tonic for his malaise. He is then led to consume the drug in ever-increasing quantities.

CIGARET SMOKING A SIGN OF DEGENERACY

The National Women's Christian Temperance Union says:

The cigaret habit is more insidiously dangerous than any other habit because of the narcotic influence, and because of the methods of smoking.

Cigaret smoking benums and weakens the nerv that controls the hart, and makes it beat irregularly. Cigaret smoking weakens the stomac, and digestiv juices ar poisond.

The inhaling of the smoke irritates the delicate membrane of the mouth, throat, lungs and nose. Hav a cigaret smoker puf the smoke upon a clean handkerchief, insted of inhaling it, and you wil discover a brown sediment upon the handkerchief, then try to realize how much sediment is deposted on the mucous membrane of the one who smokes day after day.

Cigaret smoking exercizes a definit effect upon the spinal cord, interferes with oxidation of the blood, and with nutrition, and also interferes with the functions of the eye, and makes the smoker nervous. The cigaret wil master the wil powers, and dwarf and enfeeble the brain. It makes cowards and sneaks of smokers, interferes with a successful prosecution of study, makes the smoker dishonest, untruthful, impure and criminal in his life.

The cigaret wil make the user incapable of holding any responsible position, and leads him into the society of the indolent and vicious. It goes hand in hand with impure literature, liquor, morfin and bad habits.

CIGARETS KIL

A New Arithmetic

"I am not much of a mathematician," said the cigaret, "but I can ad to a man's nervous troubles, I can subtract from his fysical energy, I can multiply his akes and pains, I can divide his mental powers, I take interest from his work and discount his chances for success."

SOME FAKES OF FAKIRS.

"PLANTS SUFFER PAIN"

Because of the general ignorance of the manifestation of vital force, seudo-scientists and imposters often try to delude the public for mercenary reasons.

By means of a specially constructed stethoscope, which is illustrated in Fig. 134, one can easily prove that muscular tension in the fingers produces an audible tone.

By placing a wire around a twig or small branch of a tree and attaching the other end of the wire to this stethoscope terminal, or localizer, the vibrations of the fibers in the twig or lim can be made audible. These vibrations ar easily made by forcibly bending or twisting the twig or lim. It is nothing but a fysical fenomenon of the vibration of fibers under tension. When this is done thru a magnifying-sound device, the sound can be likend to the "groaning of the branches."

Knowing this fysical fact, one imposter, in particular, announst that he could prove that plants or trees sufferd pain and that they would "cry out in pain" under certain conditions. This demonstration, along with many others which he claimd wer outside of the "fysical realm," he gave in New York City, in 1911. I was present at one of his demonstrations and broke up the meeting by going on the platform and explaining how he did his tricks. Within a few days he was obliged to leave the city. As the New York newspapers recorded this occurrence, perhaps some of my readers recollect the incident.

If this imposter had attacht his wire to a living plant, it might hav seemd a little more plausible. From my conception of the word, "ded," a lim cut off from a living body is ded and a lim cut off from a living tree is ded. To say that a lim from the body of an animal or from a tree can "suffer pain" after it has been taken from its body is absurd.

A Percussion Trick

It may be that some physicians who hav been guilty of doing this "trick" hav done it unconsciously. I hav sometimes watcht doctors who wer trying to practis my air-colum percussion or who wer trying to impose upon a credulous audience. As I hav explaind, pressing hard upon the skin wil change the tone in percussion.

Another "trick" is to arch the pleximeter finger whenever one wishes to produce a different note. The way they do this is to lay the pleximeter finger on the skin and begin percussing. Whenever they want to make the dul sound, they arch the finger thereby making pressure on the tip of the finger against the skin and lifting the center of the finger higher up. This givs a very pronounst dul sound. I am sorry to say that some people use this method in doing dishonest work.

Colord Urin

Another very common fake practist by many doctors is to tel the patient that they wil giv them some pils and if their urin does not turn a greenish blue within twenty-four hours they would not want to take the case. If it did, they could cure them. The pils contain methylene blue and in *every* instance must color the urin blue. Of course the patient thinks the doctor has the right remedy and places himself under the doctor's care.

A Screen Trick

Another trick used by some doctors to impose upon their confrères or to deceive the patient is to hav a patient placed behind a screen and then by means of various instruments or a human "control," tel when certain parts of the body ar toucht. The usual method of performing this trick is to tel the assistant to begin at the neck, for instance, and go down gradually until they get to a certain area of the spine. When this instruction is given an example of the motion is also given, and the assistant unconsciously follows out the same rythm of motion. The imposter gages the time that is consumed in reaching a certain part of the body and calls off when certain parts ar reacht. The same maneuver is sometimes practist on the anterior part of the body.

Blindfolding the Doctor

Another very silly trick some use to attempt to deceive their patient or audience is to be "blindfolded" and pretend to tel when certain areas of the body ar reacht by their own sensations or by certain sounds arrived at over the body of a "control." This is done by having the blindfolding material so arranged that they can see thru it, or by having some assistant make some sound as a guide.

Faking with Magnets

Another fake that has been used by some is to pretend that they can tel which pole of a magnet was being pointed toward them. This trick is very easily explaind, as the trickster has some mark of identification on the magnet whereby he can tel which pole it is. Even if the magnet is wrapt by another person, the trickster watches so closely that he can differentiate the ends of the magnet by some mark of identification on the wrapper.

Faking with Fysical Fenomena

There ar many fysical fenomena which ar really easily understood but which many people ar not aware of. Many of the "Hindu" or "Yogi" tricks ar based on them.

I hav been told that some "Hindus" ar trying to fake my magnetic-meridian-sympathetic-vagal reflex work and represent it to be "Yogi" work and handed down by their ancestors. If my readers wil carefully read over the fysics governing the Bio-Dynamo-Chromatic work, they cannot be imposed upon by these people. Remember that the magnetic meridian affects the *whole* vaso-motor system as one organ and is not confined to a certain part of the body. I know that if a person is tickled about the left ear, for example, gooseflesh wil show on that side of the body, but that is an entirely different proposition.

Any energy such as the magnetic-meridian energy, human energy, or any energy directed toward the sympathetic ganglia influences *the entire vaso-motor system as a unit and is never demonstrated over a particular area or zone.*

A "Hart Reflex" Deception

Some doctors when using a fluoroscope to elicit some vaunted chest "reflexes" take hold of the patient, who is

being examind, by the shoulder with the thum or fingers just below the clavicle, depending upon which way they ar facing. By making certain maneuvers over the spine or chest, they pretend to elicit certain "reflexes" which ar shown thru the fluoroscope.

The trick of this fake "reflex" is making pressure upon the upper part of the lung. As this trick has been practist not only in this country but abroad, probably most observers ar becoming enlightend on the subject.

Any sudden jar to the body wil cause the hart to make a sudden tip or change of position. Thru the fluoroscope it givs a sudden tilting look. This is not a reflex but is causd by *shock*.

It is a pity that any professional man wil try to deceive the public in this manner, but they do and the sooner the public is posted on these subjects, the sooner wil the fakirs stop their faking.

Sometimes agents who ar trying to sel an x-ray outfit wil demonstrate this so-cald "hart reflex" by means of the fluoroscope. It is alright to demonstrate the change of position of the hart by sudden blows or shocks, but it certainly is preposterous that it should be cald a "reflex" from direct nerv stimulation.

Hair Tests

I hav been informd that some physicians hav receivd circulars from a laboratory conducted by an "M.D." purporting to diagnose disease by means of the hair. There is no need of going into the "tecnic" of this because it is really too old, but these fakirs, protected by their M.D. degree, propose to diagnose disease by basing their findings upon certain twists, ridges, turns or spirals seen on the hair. Some go so far as to ask to hav the bulb of the hair sent so they can "more definitly diagnose the patient's condition."

Personally, I think this method of "diagnosing" is a fake pure and simple, and it doesn't seem as tho any intelligent physician would pay any money for such "tests."

Blood Tests

Probably no method of diagnosing has been so flagrantly misused as blood testing. Many blood tests ar very helpful in diagnosing diseases, especially the leukemias and

diseases affecting the lymfoid tissues, as wel as diseases of the spleen and bone marrow. Many blood tests ar of great value in determining whether anemia is progressing or not and also to see whether some insidious infectious processes ar taking place in the body.

I would, however, caution everyone who relies very much upon "blood counts" of all kinds to not place too much dependence upon it. I hav had quite a good deal of experience along these lines and hav sent some samples of blood to two different laboratories, both bearing a good reputation, and the findings of one wer diametrically different from those of the other. Nevertheless I would not think of discouraging legitimate blood testing.

Probably the most flagrant faking is done by some few "laboratories" conducted by registerd "M.D.'s" which purport to diagnose diseases by means of energies taken from the blood. This system I believe was first brot into use by a European scientist. He, however, did not pretend to diagnose diseases by the energies he took from the blood, but simply tried to show that blood (when it was fresh) gave off electrical energy, which I hav often proved to be true.

Some fakirs evidently saw a chance from these legitimate scientific experiments to make some money and impose upon the confiding medical profession. The plan in vogue in some of these so-cald laboratories is to hav a physician send some drops of bood on some kind of material, and at the same time send a report as to what they think the disease is that is affecting the one from whom the blood is taken. The physician who sends the blood charges the patient, for example $25.00 for this "examination" and the "laboratory" charges the physician, for example $15.00. In this way the physician makes $10.00 and has *his* diagnosis *concurd* with.

No doubt many physicians hav sent such laboratories samples of blood unwittingly—not realizing just what they wer doing. However, it would seem as tho physicians would know that such a "laboratory" is a fake when they consider that they ar requested to send *their own* diagnosis—which is almost invariably concurd with. Such fake schemes injure good work, and my object in mentioning them here is to put physicians on their gard.

To illustrate how some of these "laboratories" impose upon physicians, I wil cite one example. A physician told

me that he had been sending drops of blood on blotting paper or parchment paper to one of these "laboratories" for tests. He said he did not know just how the tsets wer made but he sent a sum of money along with the sample and cited what *he* knew of the case. He said he did not see anything wrong in it as he never charged *his* patient any more than the "laboratory" did him. I saw that this man was honest but that he was being imposed upon, as he seemd quite elated to think the diagnoses agreed with his.

I told him that the "diagnosis" was only a concurrence with his opinion and that I should like to prove it to him. I told him I would giv him three samples to send to this place to hav tested and we would watch the result. If the tests wer correct I would pay the bil, and if they wer not, he could. This was agreed upon and I sent the following:

Sample *G*, for example, was given as being from a person suspected of having tuberculosis and syfilis.

Sample *H*, was given as from a person supposed to hav syfilis and gonorrea.

Sample *I*, was given as from a person supposed to hav cancer and tuberculosis.

The reports wer:

Sample *G* was tuberculosis with a taint of syfilis.

Sample *H*, gonorrea and syfilis combined.

Sample *I*, cancer and tuberculosis with a hereditary taint of syfilis.

The samples that I sent wer:

G, an artificial preparation made to imitate blood when it was put on a piece of blotting paper or parchment paper.

H and *I* wer both samples of blood from the same hen, reard and educated in my own back yard.

To say nothing about the fake side of this, it has a ludicrous side. A hen brot up to stay in nights and fed on sanitary food, to hav syfilis and gonorrea and also cancer, tuberculosis, and inherited syfilis is indeed sad. According to such tests, it is no wonder that the population is becoming "tainted."

Electronic Fakes

Since so much has been said about the electron, and since so much has been said in the popular press regarding my work in polarities and with colors, I hav been told that

some preparations ar being advertized to "rectify electronic vibration." I wish to caution all physicians regarding this.

If used correctly, certain colors (if indicated) hav a stabilizing effect upon metabolism and thereby rectify certain conditions which, when they ar corrected, must hav some *ionic* influence in the changed tissues. There ar also certain medicaments that can rectify abnormal *ionic* conditions in the body if one has a way of knowing what the abnormal *ionic* condition is.

I believe there is one preparation on the market which appears to hav a valuable *ionic* stabilizing effect upon the body. I must, however, warn my readers against so-cald *"electronic rectifiers"* and some "ionic rectifiers." History repeats itself every day by showing that when any new idea is gotten into the public press, there ar plenty of enterprizing concerns that try to put out something to meet the demand. While this may be "business," yet physicians should be wary about taking up with "mushroom schemes" along such lines.

Investments

While it is not the province of this work to caution physicians regarding their investments, I want to mention one fact that has been forcibly brot to my attention. That is that physicians ar the easiest marks for all wild-cat schemes for investments, unless it is the clergy. It has been said that if physicians or the clergy hav any money they "fall" to what appears to be a big interest-drawing scheme. Remember that if there ar any enterprizes paying 100 to 1,000 per cent., none of that stock is going to be for sale. Yet hardly a week goes by but that physicians receive circulars from oil companies, mining companies, rectifying companies, etc., offering to pay dividends ranging from 100 to 1,000 per cent. Every physician knows it is hard enuf to get a few dollars ahed without having them wasted in this manner.

OFFIS EQUIPMENT AND OTHER "EQUIPMENT" THAT HELP SPEL SUCCESS.

Without knowing why, many physicians hav not succeded in their offis practis. It is not elegance that counts with the average patient as much as cheerful and bright surroundings and a smile.

If you ar sick, you do not want to see pictures of operations or of dying people on the walls of the offis you might visit. You do not want to enter an offis that looks like, and has the air of an undertaking establishment. Neither do you want everything in the offis to look like a hospital or operating room.

As a rule patients ar either sick or think they ar when they call on a physician. Let your waiting room and offises hav a cheerful appearance. Make the patients smile and forget that they ar in a doctor's offis.

Don't hav instruments showing thru glass doors. Many a patient has left to return no more just because the doctor did not study the psycological side of offis equipment and management.

White enamel in profusion givs a neurasthenic a shudder. The sight of sharp instruments or points wil do the same thing. Black or very dark furniture wil giv them a somber feeling. Bad smels and impure air wil often drive a good patient to another offis. Cigaret, or stale tobacco smoke wil often set a sensitiv patient against the offis as wel as against the physician.

Light colord furniture has a far better effect on a nervous patient than white enamel. Pictures of laffing and dancing children and of landscapes and rural scenes wil often change a sad face into a smiling one. Make it a rule to hav your patient leave the offis with a smile. A cheerful word often pays the physician better than an operation and always wil do your patient good.

Study your patient psycologically. Place yourself temporarily in their place. Get their viewpoint and *lead* them, but don't try to *drive* them.

Treat them as you would be treated wer you in their place.

OFFIS EFFICIENCY

Many physicians ar apparently of the opinion that a fine offis equipment is all that is necessary to bring success. This is not so. Not only should the offis and treatment rooms be wel equipt and the physician know his modalities thoroly, but the general arrangement of the room is of great importance.

No doubt very many more physicians would be doing offis specialty work, especially along the lines of fysical therapy, if they knew how to make a living at it. They often tel me that the treatments take up so much time that they cannot make enuf to liv on, and that is why they use serums, vaccines, surgery, etc.

Most of the trouble with fysical therapeutists is that they lack *efficiency*. They hav not been traind along business lines. In the first place, know your work wel and hav confidence in the modalities that you use or do not use them. Aim to use the very latest and most approved methods and the very best equipment.

What the Offis Specialist Should Hav

(When I say "offis specialist," I refer just as much to the general practitioner because all hav more or less offis work to do.)

Besides being equipt as abov mentiond, one must know something about *system*. In using radiant light treatment, the patient has to disrobe and that takes time. It also takes time to dress. Each treatment room should hav two dressing rooms—one in which a patient can disrobe while another is dressing. In this way no time is lost. Do not bother with dressing gowns, kimonos, etc. Use small white sheets, using a clean sheet every day for each patient. It does not pay to economize on laundry when doing this work.

A treatment room for the incandescent light and the quartz light combined need be only six feet wide by nine feet long (6'x9'). The dressing room should be about three feet square.

If your hours ar by appointment, manage it so that you know just when a patient is coming so there can be no interruptions. Having the patient come at any time is bad practis. Be punctual yourself and make the patient pay for the time you hav allotted for them.

Do not begin treating any patient until you hav thoroly diagnosed them. That is one of the greatest features in fysical therapeutic work. Know from your own standpoint what ails the patient, or at least hav some idea before beginning treatment. Do not take the word of someone else. The diagnosis should be charged for, and the patient should pay at least five times as much for the diagnosis as for each single treatment. That is the minimum for diagnosing and the price should be from that up, depending upon circumstances. To diagnose a patient for nothing is belittling your profession. If you do not know how to diagnose, be frank about it and let someone else do it for you, but by all means lern to diagnose and diagnose correctly as that is nine-tenths of the efficiency.

Make it a rule to get cash for your diagnosis. Then the patient can go or not and you ar not a loser. Make it a rule to hav your patient pay you at least every week.

After you hav diagnosed the patient, do not insist that you treat them. Outline the treatment they should hav and tel them they can hav you do it or someone else who is as wel equipt can do it.

Most of the treatments should be given daily to accomplish the best results. In that way the patient does not hav a chance to lose between treatments what he has gaind with the treatment. Of course it all depends upon what the trouble is. Cronic diseases, such as tuberculosis, asthma, bronchitis, hay fever, reumatism, stomac and intestinal troubles, should be treated daily and by the month.

Regarding the time occupied in giving treatments. Formerly I advocated 20 minutes with the radiant light on the posterior part of the body, and 20 minutes on the anterior part of the body, this to be followd by 40 minutes of oxygen vapor. (This is only an example.) I hav also advocated using electricity (sinusoidal currents) while the radiant light is shining on the body, finishing with 40 minutes of oxygen vapor.

I hav found that this tecnic can be modified to the benefit of the patient and also to the physician if the quartz light is employd—the quartz light and the incandescent light radiating on the body at the same time. Ten minutes is enuf for the exposure on the anterior part of the body and 10 minutes on the posterior part of the body. This is followd by oxygen-vapor inhalation for 20 minutes. I find

when the quartz light is used, the patient is really getting many of the benefits from the ozone impregnating the capillaries that they wil from oxygen-vapor inhalation. Then, with the quartz light being used simultaneously with the incandescent light the effect is greatly enhanst and the patient is getting a great deal more than if the time is curtaild. The duration of treatments given abov is for such conditions as tuberculosis, cancer, syfilis, gonorrea, etc. For a case of appendicitis the incandescent lamp should be allowd to radiate over the appendicular region much longer—in some instances for an hour. The same can be said for pus tubes and often for neuritis.

If one is fitted up for doing this Bio-Dynamo-Chromatic work, Chromo-Therapy and Foto-Therapy on the large scale, they should hav one or two incandescent lamps that can be used in rooms without the quartz light for such conditions as abov mentiond. Then they should hav two incandescent lamps and two quartz lamps that can be used simultaneously. In that way one physician can take care of five to eighteen patients every hour.

When it comes to special treatment like treatment for the ear, throat, rectum, etc., of course that requires special time and has to be pland for. These treatments should be pland when the quartz light is not in use because when the quartz light is in use one should hav their individual attention on it and take no chances of letting it radiate too long on the patient.

Use interval time clocks for every lamp and for every treatment if it is done mecanically, no matter what kind it is.

There ar some treatments in which three or four different apparatuses can be used, giving the patient enhanst benefit and also saving the physician much time. For instance, in a case of Hodgkins' disease you could hav the 3,000 candle-power light, and also the quartz light radiating on the body, and radiations from the Kromayer lamp could be given over the enlarged glands.

When using electricity thru the vagina or rectum, the electricity can be operating while the lamps ar also operating.

Abov all things, keep a cheerful manner always uppermost with your patients. Expect them to be plesant and smiling and you be the same. It not only lightens your work but it wil do much toward your success.

PART NINE

THERAPEUTIC GUIDE.

Treatments based on my B-D-C mesures as set forth in this book ar given in this Part Nine.

GENERAL CONSIDERATIONS

The methods of treatment as outlined in this Therapeutic Guide ar such as I hav found by experience to be efficacious. No doubt there ar other methods that wil produce good results, but I feel confident in saying that the methods outlined here ar among the best if not *the* best of all.

It is very seldom that two physicians agree on the same method of treatment for the same conditions, but this state of affairs would not exist if physicians took NATURE as their guide.

As far as possible my methods of treatment follow nature—in fact my methods hav been very properly cald "CONDENST OUT-OF-DOORS." I do not advocate the use of very many drugs, but such drugs as I do advocate I am sure by experience ar good for the conditions named. I do not believe in being tied to any one pathy, but believe in using *any mesure that wil help the patient without injuring them.*

I do not believe it is natural to put any medicament into the skin by puncturing or abrading it. I believe it is taking an undue advantage of any animal, human or subhuman. Nature knows what is best for her children—animate or inanimate.

The popular method of using medicaments directly in the blood stream I believe is an assault against nature and produces injurious results in the long run. It is the most antagonistic method that one can think of. Nature has garded all the avenues into the animal in such a way as to safegard the organism, and I believe the time wil come when putting medicaments into the body by piercing the skin, especially by opening the blood vessels, wil be clast with blood-letting, etc.

Altho I do not mention it in all the following diseases, as a rule I finish every treatment with oxygen-vapor inhalation, giving the patient a treatment of from 10 to 40 minutes, depending upon circumstances.

When using the quartz light on the patient, 20 minutes of oxygen-vapor inhalation is as efficient as 40 minutes without the quartz light.

When using the combined powerful radiant light energy—the 3,000 candle-power incandescent lamp in conjunction with the quartz light—for ten minutes, I find the effect is as good as giving either one separately for a longer period.

To recapitulate my tecnic. I use the *combined light treatment* for enhancing metabolism. I use it in nearly all conditions and obtain results that I do not believe can be duplicated by any other method. The *tecnic* is to allow the powerful incandescent lamp to radiate over the body—especially over the area one wishes to treat—for ten minutes, with the globe about 36 inches from the body.

In the first treatment for the last minute of the ten, allow the quartz light to radiate on the body along with the incandescent light—front and back of the body. (In some conditions I radiate the lights on the side—thus making four periods of five minutes each.)

The next day ad one minute to the exposure with the quartz light. Continue in this manner, adding one minute to the quartz light each day until both lamps ar radiating upon the body for ten minutes on the front and ten minutes on the back.

If you hav no quartz, mercury vapor lamp to use in connection with the powerful incandescent lamp, then allow the radiations from the incandescent lamp to fall on the body for 20 minutes insted of 10, radiating first on the back or front and then on the opposit side of the body. The usual distance the globe should be from the patient for this long, constitutional treatment, is 36 inches.

Often it is very refreshing to the patient and at the same time good for the skin to anoint it with the used oils from the oxygen-vapor generators. They can be used either pure or mixt with some other light oil such as oil of eucalyptus. It is best to do this after the light radiation.

For some joint affections, be sure to use soluble, stainless iodin, rubbing it into the skin after the incandescent light has radiated on the skin for two or three minutes.

In tuberculosis, it is often advantageous to anoint the chest with this soluble, stainless iodin while giving the light treatment, but if one follows out the tecnic of iodin therapy, that is, giving iodin in milk three times daily, it is not as necessary to use it externally for tuberculosis or any other general toxemia.

In the following Guide, when I mention powerful, radiant light energy, I always refer to radiations from a 2,000 or a 3,000 candle-power incandescent lamp (a 1,000 or 1,500 watt gas-fild lamp, preferably the "Sunbeam" manufactured by the General Electric Co.) supplemented by radiations from a quartz, mercury-vapor lamp. The radiations from such a quartz lamp ar tecnically known as the QUARTZ LIGHT.

When I mention *Sulfur Therapy*, it is as indicated under the title, "Sulfur Medication," in this book.

In fact, every modality mentiond in this Therapeutic Guide is outlined in this book. If I mention any modality that is not referd to in this book, its mode of use is given.

In treating any disease, it is generally understood that dietetic and hygienic mesures should be enforst. It is not necessary to mention this under every disease. Some conditions call for one class of diet, and others for another, and it is taken for granted that the physician understands that he should not giv sugar in glycosuria nor proteids in albuminuria.

In beginning treatment with any patient, see that the bowels ar wel emptied and kept in good order. Also see that the teeth ar in proper condition, and find out whether the eyes ar properly fitted. In fact, be careful to examin every part of the body to see whether there ar any impediments that would cause the condition that you ar cald upon to treat. In other words, try to diagnose the case thoroly and let your treatments be in accord with your findings.

It is not always possible to treat the same condition in every patient in the same manner, but in compiling a *Therapeutic Guide*, one has to lay down a general rule of procedure and the physician is supposed to modify it to fit the patient. For example, some neurotic patients cannot endure radiant light energy from the incandescent lamp while they can take the quartz light. There ar others who cannot endure

any kind of radiant light energy. Such persons hav to be treated according to circumstances. However, there is not one patient in a hundred but that can be improved by using powerful, radiant light energy on the body. It is nature's great remedy and with oxygen vapor is truly CONDENST OUT-OF-DOORS.

SLEEPING PILLOWS

This seems the best place to mention something regarding sleeping pillows as they should be thot of in *every* condition you hav to treat. Did you ever think what an important part of the body the *neck* is—how the blood vessels that supply the hed and the impulses that govern the body all go thru the neck, and how all the notifications from the body hav to pass thru the neck to the hed before the brain can act?

Think what the pillow does! It bends the neck in such a manner that when you ar asleep you ar liable to impinge on the vessels and nervs that pass thru the neck. Man is the only animal that uses a pillow.

My advice to people in general is to do away with the pillow and if necessary elevate the hed of the bedsted from two to six inches. A sleeping pillow is only a matter of habit. When a person is awake, that is one thing, but when he is asleep he does not know in what position the hed falls or how the different parts of the neck can be impinged upon.

Many cases of severe hedake and migraine hav been cured by having the patient do away with pillows and if necessary elevating the hed of the bed—two inches to start with and from four to six inches if more comfortable.

Some cases of cold feet can be entirely cured by elevating the hed of the bed in this manner. Many cases of puffiness about the eyes and face can be entirely cured or at least greatly relievd, by elevating the hed of the bed.

ACNE

A

Perhaps more persons consult their physician regarding acne than for any other skin affection. The reason for this may be pride, as this skin derangement is most often on the face.

As *acne vulgaris* is an inflammation of the sebaceous glands and of the follicles of the lanugo hairs situated therein, to prescribe ointments is like adding fuel to the fire.

A I shal not go into a ful discussion of acne, as almost every physician is familiar with this condition, but there ar some points that I hav gaind from experience that I wish to bring before your notis. As acne vulgaris in the simplex form occurs about the time of puberty and *generally* disappears before majority, many physicians ar careless with the patient and tel her that it is a "natural condition" or that it wil soon go away of its own accord. No greater injustis can be done the young sufferer. Many of the scard faces that last for a lifetime could hav been avoided if the physician had taken the time to go into the matter more thoroly. Another point in this connection is that the young person, who is relievd of this malady, wil generally be a staunch friend of her benefactor.

Acne Indurata is a more stubborn variety and appears any time after majority, but generally between the ages of twenty and thirty, and is more prevalent in women than in men. This condition is also supposed by many to come to a natural resolution, but this is a mistake because acne indurata wil many times remain with the patient for years unless some means is taken to abort it.

The treatment of both these forms of acne is practically the same. Therefore I shal consider them together.

When the pustules ar deep seated, it is wel known that lancing them and cleaning out the crypts with a suitable curet is a popular procedure. For this work I advize a *fine cataract nife* rather than the ordinary lance, as there seems to be less liability of scarring with such an instrument. Curettage is painful and many times helps to produce a scar. Therefore I want to call your attention to a method that I hav used nearly every time insted of curettage.

Before opening the deep seated pustule, clean it wel with alcohol and cotton and be sure that the nife is steril. Hav redy a glass hyperemic cup from half an inch to an inch in diameter connected to some form of air exhausting apparatus (Fig. 384). As soon as the pustule is lanst, place the glass cup over the incision and allow negativ pressure to draw out a quantity of blood, which wil help wash out the lesion and at the same time take out all available pus. Before removing the cup from the face, detach it from the suction apparatus to prevent the blood from rushing thru the rubber tube. This blood can be caut on a sponge when the cup is removed. Bleeding wil hav practically stopt on removal of the suction cup and I then anoint the lesion with a

soluble, stainless iodin preparation sold under the trademark name of *Iodex*. If there is any better soluble preparation of iodin, it can be used, but so far I hav found this to be excellent. If there ar any other small lesions that can be taken out with a comedone extractor, that should be done, and then cover with this iodin preparation, using the suction cup as before mentiond. (Fig. 385 shows the detachable union.) A

When I hav removed what is removable at the first sitting, and while the patient is lying on the operating table, I cover the whole diseasd area, no matter how extensiv, with this iodin preparation and allow the rays from a 3,000-candle-power lamp to fall on the face and chest of the patient for about 20 minutes, turning the hed from one side to the other and at the same time moving the lamp so it wil not burn the skin in any particular place. It is wel to gently rub the face occasionally during the treatment, and at the end of 20 minutes nearly all of the iodin from this preparation wil be absorbd. After this procedure wash the face off thoroly with alcohol and all of the iodin vehicle, which is of an oily nature, wil be eradicated from the skin, and the skin wil be left in a very agreeable condition.

If there is an indurated section, where the skin feels lethery, use the vacuum cup over it while the iodin preparation is on the face, and move this cup back and forth over the "lethery" area. This not only massages the skin very severely but helps to bring about a profound hyperemia where it is desired. During all this procedure keep the rays from the 3,000-candle-power lamp shining over the face. The eyes should be coverd with a piece of black cloth. The operator should always wear "smoked," or special glasses when using a lamp of this power.

If you hav not a 3,000-candle-power lamp, use the strongest power lamp that you hav, but the incandescent lamp of this type is what I hav found to be the most effectual. I hav the patient strip to the waist during these treatments so as to giv stimulation to the back as wel as the chest. This is beneficial in many ways.

Having commenst the treatment of the face itself, which is necessary under all conditions, begin to find out what other trouble there is. In nine cases out of ten, there wil be some pelvic, or stomac, or intestinal conditions causing this trouble. It generally indicates a deficiency in elimination either from the kidneys, intestins, or skin. We may not at first find the cause, but keep looking for the etiological

A factor, as acne is not a disease of itself, but a *symptom* of some other derangement.

We may find that the condition is caused by a neurotic trouble, and this in turn is caused by some organic trouble. As soon as we hav found that there is either a tender, or relaxt ovary, or that the patient is suffering from some form of ovarian, or uterin trouble, or derangement of the alimentary functions, we must begin at once to remedy that condition.

In males, especially in adolescence, we find that the trouble is of a sexual neurotic nature, which should be remedied by common sense fysical mesures.

In the *male* the etiological factor of acne is often an adherd or elongated prepuce. *Circumcision* is the radical remedy for this. In the *female* the underlying cause often is an adhered or redundant hood over the clitoris. Remedying this either by breaking up the adhesions or complete circumcision wil often remove the cause of acne. The *hymen* often is the cause of the neurotic condition which predisposes to acne. Fully dilating the hymen as wel as treating sensitiv areas about the remains of the hymen wil often relieve the condition which causes acne.

I do not believe that internal medication has much effect upon acne, but with mesures as abov cited, we wil get results that wil giv plesure to the physician as wel as the patient. In treating any and all disease "*treat the man that's got the disease—not the disease that's got the man.*"

For *removal of scars* I hav found nothing that can compare with hyperemic treatment and cataforesis. If there ar scars left after filling up depression by means of the hyperemic cup, then employ *thiosinamin.* I employ it cataforically in the same manner as is recommended by Neiswanger. Make a solution in the following proportions. This keep in an amber, glass-stopperd bottle.

Glycerin	32 mils
Distild water	96 mils
Sodium clorid	1 gram
Thiosinamin (Merck)	5 grams

For employing it cataforically, use lintine in a regular cataforic electrode, or on an electrode made from ordinary block tin or aluminum. Platinum makes the best electrode, but it is too expensiv for general use. The cataforic electrode is used on the *positiv* pole and the indifferent negativ elec-

trode is placed over any convenient locality, preferably the abdomen. This "indifferent" electrode is best made of clay, as previously explaind. A

I hav found that thiosinamin is much more activ when given cataforically than when given internally or by inunction.

The piece of lintine that is used on the electrode should extend a little beyond the metal. If the regular cataforic electrode is used, this part wil take care of itself as the metal is countersunk into rubber.

I use from 3 to 20 milliamperes, according to the size of the electrode. One must be careful to not use too powerful a current. For this reason it is better to use a little less than can be endured and make a few extra applications.

After giving the first cataforical treatment, the next treatment should not be given until the skin that has been treated has become ded, when it can be redily peeld off. As a rule, this takes place inside of four days.

If for any reason you cannot employ cataforesis, a 10% *thiosinamin inunction* may be used, the base of which should be lanolin. This can be applied and coverd with oiled silk, and re-applied until the skin becomes ded. Sometimes all the scar tissue wil not be removed at once and the application has to be repeated, but generally the cataforic method of treatment is very satisfactory.

There ar many devices that can be used for hyperemic treatment, but the best and most inexpensiv arrangement is that which can be attacht to a sink faucet. It is fully illustrated in Fig. 384. It is handy and so inexpensiv to operate that all physicians doing either general or special work should hav such an equipment. I always use a separable metal tube to connect the short piece of tubing that is attacht to the cup. This facilitates the separating of the main piece of tubing from the short piece. The cup should always be cleand out and sterilized after it is used. For this purpose use first soap and water, or alcohol, and then put it into a 10% formaldehyde bath. When doing a good deal of this work, the different sized cups can be kept in a jar of alcohol, or formaldehyde solution, but rinse them off wel before using.

Another method of treating acne is to follow up the use of the powerful incandescent light and soluble iodin by chilling the inflamed areas by means of an ether spray. For this

A purpose I hav a specially constructed freezing atomer shown in Fig. 274.

In using freezing sprays about the face, one should be careful to keep as much of the vapor from the nostrils as possible, and the eyes should be coverd during the treatment. I always giv the freezing, or chilling treatment, with the patient sitting or standing. It requires about thirty-five pounds of air pressure to operate one of these special freezing atomers. Sometimes pustules can be aborted by this reactionary method of treatment—extreme heat followd by extreme cold. Sometimes I freeze a very limited area on the face until there is a good layer of frost, but we must remember that this always is followd by a discoloration of the skin which lasts for several days. However, this discoloration is of small moment, inasmuch as the deep, red discoloration from acne indurata is very obdurate and lasts for several months.

Carbon dioxid snow, mentiond in Part Four, Lecture XII, is by many considerd to be a very efficient local method for treating acne.

Hygienic and dietetic mesures must always be enforst in treating acne.

Frequent and gentle massage wil greatly benefit the skin circulation.

For rubbing over the affected surface night and morning, probably the following formula is as good as anything:

Thymol	1 gram
Boracic acid	8 grams
Witch-hazel	135 mils
Rose water	36 mils

M. sig. Apply night and morning after thoroly clensing the skin.

A 10% solution of sodium salicylate from the negativ pole, 5 to 10 milliamperes for 10 minutes wil improve the texture of the skin.

The French "ecorchement" face mask is of great servis. This method is given under "Eczema."

For removing the old dry epidermis and replacing it with new, one can paint the area over with *salicylated collodion*, the formula for which is given under the hed of "Callositas." This collodion mixture should be painted on for two or three days in succession and allowd to come off unaided.

The latest method for treating acne is to use the quartz, mercury-vapor lamp and Kromayer lamp in connection with the 3,000 candle-power incandescent lamp.

Put the patient on a fast for 24 to 48 hours, clearing the bowels out wel with podofyllin and salithia. Giv ½ to 1 grain calcium sulfid (Abbott) every hour for at least a week if the patient can tolerate it.

Put the patient on a strict diet of bred and milk—nothing else unless it is spinach (plain with the exception of lemon juice).

The first day radiate the quartz light over the face so as to bring about a slight hyperemia. The next day giv more quartz light to bring about a profound hypermia. Skip a day and giv more quartz light. Then begin treating the whole body with powerful radiant light energy, using radiations from the incandescent lamp 10 minutes, giving the quartz light during the last minute of the ten. The next day treat the whole body in the same manner but giv one more minute to the quartz light, and so on until the patient can take 10 minutes from the two lamps used simultaneously. Cover the whole body by these radiations. By this time the body wil take on a profound tan from hed to foot.

If there ar any specially indurated places on the chin or elsewhere, use compression radiation thru a quartz filter.

This quartz light and radiant light combination treatment wil giv a gratifying surprise to anyone who has never tried it out.

As a rule inside of a month the worst case of acne can be cleard up and the patients wil feel better than they hav in years.

Regulate the diet, prohibiting all fats and as a rule all sugars. Of course if there is any pelvic derangement or some sexual neurosis or undue irritation about the sexual organs, they must be rectified.

ACNE ROSACEA

This form of acne requires special notis, as it is so common. This form is often cald *"Brandy Nose,"* yet I hav seen it in persons who said they never had taken a glass of liquor in their life.

This cronic inflammation of the face can be caused by nicotin as wel as by over indulgence in eating. The *real*

A *etiological factor* is a deranged digestiv apparatus, no matter what has causd that.

In the first place correct the habits—prohibit all alcoholic beverages, or patent medicins with alcohol in them; cut out all forms of tobacco *entirely* and put the patient on a fast for one or two days. Enforst elimination of all natures must be carried out.

For *local treatment* nothing can be compared with the *Quartz Light*. I hav used freezing, powerful incandescent light, carbon light, open arc light, etc., but the QUARTZ LIGHT is the best remedy for the local lesion. Treat the whole body with combined incandescent light and quartz light.

(*For the treatment of other forms of acne, see Skin Diseases.*)

ACTINOMYCOSIS

This is an infectious disease caused by the ray fungus (tricomyces actinomyces). This disease is best diagnosed by the microscope.

The quartz light is the only treatment that I think is applicable for this condition. Use appropriate quartz applicators and treat heroically.

Iodin therapy is indicated in this condition.

ADDISON'S DISEASE

This givs an *A*-MM VR. *Treat as for tuberculosis.*

Use powerful radiant light energy over the renal region especially.

Extracts from the adrenal gland ar recommended by many.

Watch the blood pressure carefully if giving adrenal gland extract.

ADENOIDS

Altho Adenoids come properly under the hed of surgery, yet nearly all fysical therapeutists ar consulted more or less regarding this condition.

The synonymous names for adenoids ar adenoid vegetations; faryngeal adenoids; faryngeal tonsils; epifaryngeal tonsils.

Definition:

The term adenoids, means hypertrofied lymf glands which ar normally in the faryngeal space.

Altho they ar chiefly located on the superior and posterior walls of the farynx, yet they may extend in the fossæ of Rosenmuller and even to the opening of the Eustachian tubes. A

Sometimes the adenoid growth is such that a sinus is formd in it, which becomes infected and continually discharges its secretions into the farynx. This condition is known as *Thornwald's Disease.*

It is not necessary to go into a discussion as to the etiology or pathology or symptoms of adenoids, as they can be found in any of the standard Nose, Throat and Ear books.

Prevention:

To *prevent* adenoids is certainly better than to cure them. I believe adenoids never occur in children who habitually breathe thru the nose. It seems as tho nature's law of filling up unused space is the real cause of adenoids. If the child does not breathe thru the nose, there is quite a space in the epifarynx that is not used. Therefore it seems as tho nature fild it up, following out her natural laws.

I believe Dr. William H. FitzGerald of Hartford, Conn., was the first to publish quite an extensiv treatis on the effects of mouth breathing. He advocated the use of an isinglass plaster over the mouth of mouth-breathing children so that they would not breathe thru the mouth while sleeping.

When the child is awake it can be taut to breathe thru the nose, unless there ar some serious obstructions, in which case they must be removed or corrected.

Altho there ar many methods of treating the breathing passages so as to make them more open, probably the *Quartz Light* offers us more real hope from a non-surgical standjoint than any other modality. For this purpose one must use suitable applicators and use the quartz light from the Kromayer lamp.

Treatment:

It is hard to outline a non-surgical plan for treating adenoids, because it all depends upon the condition of the adenoid growth—whether it has become very fibrous or not.

Very many cases of adenoids can be redily cured by having the child constantly breathe thru the nose. Some cases hav been cured by having the child inhale oxygen vapor at least half an hour a day. Breathing tubes with medi-

A cated vapors ar often very beneficial for this, as it makes the child exercize his breathing mecanism thru the nose and at the same time antiseptic vapors can be inhaled.

Often powerful radiant light over the face and throat, augmented by the *Quartz Light*, along with proper breathing exercizes wil cure adenoids.

If, however, the adenoid growth has been neglected and the child begins to hav the *"adenoid face,"* I do not believe we ar justified in trusting to breathing exercizes or any other slow process for cure. A radical surgical operation for removing the adenoids is then imperativ.

There ar various ways of removing adenoids, some advocating suitable adenoid forceps and others using curets. Probably Brandegee's adenoid forceps, supplemented by a suitable curet as the Beckmann-Stubbs, ar among the best instruments. F. A. Hardy & Co. of Chicago, make a complete set of special instruments for adenoid operations.

I would not advize anyone not traind in this work to attempt removing adenoids by instruments. In fact, I would not advize them to use the bare or coverd finger for removing them, unless they hav had some training in the work.

Often small adenoid growths can be removed by placing a piece of steril or medicated gauze over the index finger and very quickly and dexterously passing it back of the hard palate up into the epifarynx with a sweeping motion.

To prevent the patient from biting, the pressure of the cheek in between the teeth is generally sufficient, but with some children a regular mouth gag is required.

The post-operativ treatment for adenoids is oxygen-vapor inhalation and powerful radiant light energy—incandescent and quartz.

ADHESIONS

Adhesions ar part of the aftermath of practically every abdominal operation. Probably there is no other condition that brings more patients to the fysical therapeutist than adhesions.

According to the custom, women ar the victims of the majority of abdominal operations and therefore they ar more frequently afflicted with adhesions.

Tyfoid fever, peritonitis, pleurisy, and other inflammatory conditions that result in abrading approximating surfaces ar the etiological factors in causing adhesions.

Many mecanical devices hav been invented for "breaking up" adhesions but most of them ar useless. I would not say that all ar because I do not know. It is said that some who had adhesions wer freed from them by falling down stairs. The shock to the system from such a fall, however, results in a greater damage. A

If we knew just where the adhesions wer, that would be a vantage point in determining whether ergotherapeutic mesures would relieve them, but inasmuch as so many of the adhesions ar in tissues that ar both movable, mecanical devices for jarring the body seem to be of very little value.

Probably *careful* manipulation in connection with radiations from the powerful incandescent lamp constitute the best method for relieving adhesions.

Systematic *exercizes* directed to overcome adhesions, such as pleuritic adhesions, ar no doubt of great benefit. I hav often had patients with pleuritic adhesions who hav been entirely relievd by carrying out deep breathing exercizes and receiving treatment from the powerful radiant lamp.

Some adhesions in the pelvis can be relievd by mecanical devices, while many other adhesions ar made worse. Therefore one must be very particular in selecting an apparatus for "loosening adhesions." I think that many times the adhesions ar not broken up, but that the approximating tissues ar each changed in their position.

Many times an *oscillator* wil do a great deal toward relieving adhesions. Whether it "breaks them up" I do not know. The symptoms at least ar ameliorated.

Many surgeons wil advize an operation for removing adhesions. This seems to be adding insult to injury. In relieving one adhesion as a rule they make twenty more.

When an *abdominal operation* has to be performd, as in removing a large fibroid tumor, I believe the proper tecnic is to allow a pint or a quart of warm steril oliv oil to flow into the partially closed abdomen just before the final closing up is done. This can be accomplisht by putting a tube in thru the abdominal wall and closing up around it, pouring in the oil thru a funnel, then withdrawing the tube and make the final closing.

(This tecnic was first workt out, I think, by a surgeon at Flower Hospital, New York City.)

After this is done, the patient must be turnd by assistants every 15 to 30 minutes for the first forty hours, then

A every hour for the next twelv hours, and so gradually increasing the intervals between the turnings until after the fourth or fifth day when the patient can turn without assistance.

This tecnic not only avoids nearly all, if not all, adhesions but it acts as a nutritiv to the patient. This is the tecnic that I hav carried out in every operation that I hav to hav performd, and the results ar extremely satisfactory.

After the patient is out of the bandages and able to come to the offis, I giv them radiations from the powerful incandescent lamp and the quartz lamp every day for about a month. This produces remarkable results, and I believe every hospital should be fitted up for giving such treatments. Unless persons hav seen this post-operativ tecnic carried out, they hav no idea what a great benefit it is to the patient.

Always protect the wounded surface by placing a thin piece of gauze over it until it has become wel tuffend. *Cicatrical tissue wil not stand heat as wel as normal tissue.*

ALCOHOLISM

From the experience I hav had in treating this condition, I might write quite a large treatis. The treatments sumd up ar as follows:

Prohibit the use of alcohol or stimulants in any form.

Put the patient on a fast of from one to three days, instructing them to drink at least a glass of water every hour.

Giv saline laxativs to keep the bowels moving several times a day for the first few days.

Then put them on a liquid diet carrying a large proportion of water.

Giv electric light baths to make them perspire profusely.

Keep them away from all companions who ar inclined to tempt them to drink alcoholic beverages.

After this treatment has been kept up for about two weeks, a more varied form of diet of easily digested food can be given.

For treating this condition I find the radiant light energy is very beneficial, using the powerful incandescent light and the quartz light in combination to such an extent as to bring about a most profound hyperemia. (*See Nicotin.*)

ALOPECIA

Baldness that comes on suddenly is often caused by constitutional diseases or conditions or some nervous disturbance.

Alopecia Areata or *Alopecia Circumscripta* is baldness occurring in sharply defined patches.

Alopecia Furfuracea is a cronic disorder of the scalp markt by itching, dandruf, etc.

Alopecia Neurotica is baldness following a nervous disease.

There ar many other forms of *alopecia,* but they ar all to be treated about the same. If you can ascertain the predisposing cause, eradicate that. For local treatment there is nothing that can compare with the *quartz light.*

The powerful incandescent lamp has a similar effect, but it cannot be compared with radiations from the quartz, mercury-vapor lamp.

Where there is markt follicular atrofy, use compression radiations. Often this should be done thru a quartz filter. These treatments can be given once every three or four weeks.

(*See Skin Diseases.*)

AMENORREA

In all forms of amenorrea we must first find out what causes the suspension of the menses. One of the simplest and best methods of treating it is slow sinusoidalization over the 2d lumbar vertebra. Stimulation over the 2d lumbar and 11th thoracic vertebrae has a similar effect. In many instances negativ galvanism per vaginam, used every other day, is efficient.

If the means for any of these agencies ar not at hand, lay the patient on the abdomen and place the nuckles of the left hand over the 1st and 3d lumbar vertebrae. Then forcibly extend the thighs by lifting them with the right arm (Fig. 263). Repeating this maneuver about once a minute for five minutes wil sometimes work wonders. In doing this, one must be careful not to overdo it and stop the extension the moment the patient feels any pain. While the thighs ar lifted in this manner, a gentle to and fro movement helps to enhance the effects. Repeat this three days in succession.

In any treatment for this trouble use also electric light baths and powerful, radiant light and quartz light.

A If the patient is clorotic or anemic, I know of no better treatment than radiations from the 3,000-candle-power incandescent lamp, quartz light, B-D-C therapy and oxygen-vapor inhalation. There ar no better equalizers of metabolism than these.

ANEMIA

Proper dietetic and hygienic mesures should be instituted. Lettis, spinach, celery and onions ar never to be omitted from the diet.

Use iodin therapy.

Radiant light energy—the powerful incandescent lamp together with the quartz light—along with oxygen-vapor and B-D-C therapy ar valuable fysical mesures.

The magnetic wave current is of great value in treating anemia of all kinds. The magnetic current seems to cause the red corpuscles to take up oxygen—just what they ar in need of.

Fresh air along with proper breathing is extremely beneficial and should be demanded.

ANEURYSM

Etiology

The etiology of aneurysm is trauma, any condition which weakens the walls of the blood vessels, arterio-sclerosis, or any condition which raises local blood pressure. Under causativ factors increasing local blood pressure can be mentiond muscular effort such as hevy lifting, sudden fright, parturition, straining at stool, etc. Syfilis is estimated to be the causativ factor in about 80% of cases. Alcohol, inasmuch as it is a predisposing factor in arterio-sclerosis, must be mentiond as a predisposing cause. Likewise nicotin. Any factor that would cause gout would also hav a tendency to produce aneurysm indirectly. Led poisoning, or working in minerals, ar also predisposing factors.

The greatest number of cases occur in males and between the ages of thirty and forty.

General Considerations

Aneurysm may occur in any artery of the body and be miliary in size or of immense dimensions. The majority of aneurysms occur in the thoracic aorta. In the aorta itself, the arch seems to be affected in the greatest proportion of cases. I shal not speak of external aneurysms, as they come under the hed of surgery.

Aneurysms ar almost endless in variety and may be true or false; the one being a circumscribed dilatation of one or more coats of an artery, while the other has for its wall the surrounding tissues, the blood vessels having ruptured. A

The usual cause of aneurysm is arterio-sclerosis. Therefore the pathology is evident—loss of elasticity in the blood vessel which, having become weakend, any sudden straining may cause to giv way.

SYMPTOMS

The chief symptoms of aneurysm ar a peculiar bruit called the *aneurysmal bruit* herd over the swelling, and pressure symptoms consisting of pain and paralysis from pressure on nervs and absorption of the contiguous parts.

As a rule, the pain is constant and nawing, but in some cases it is paroxysmal. The pain is peculiar inasmuch as deep pressure seems always to be ameliorating, especially when the pain is localized over the tumor. *Referd pains* vary with the situation of the tumor and ar always present when any sensory nerv is prest upon. Pain in such instances wil be referd to the periferal distribution of the nervs under pressure.

Behan says, "When the arch of the arota is involvd, the local pain is felt to the right of the sternum at about the junction of the second or third rib with the sternum, and the referd pain is felt on the inner side of the right arm and extends as far down as the elbow."

Frequently in aneurysms of the thoracic aorta, the pain does not follow the distribution of the intercostal nervs, but is located over the back in the distribution area of the spinal nervs. It may also radiate into the left shoulder and arm. Aneurysms of the thoracic aorta do not produce as much pain as do those of the abdominal aorta, in which condition the pain is often very severe and is usually felt in the back.

At first, aneurysmal pain is paroxysmal and then it takes on a dul, boring caracter. When this really occurs, the diagnosis of bony involvment may be made with absolute certainty. Certain positions in which pressure is made upon the vertebra cause extreme pain. Hyperalgesic zones ar often present and should be carefully studied and markt out.

In many aneurysmal conditions, no pain is mentiond by the patient, but carefully going over the spine and making

A pressure at the site of each vertebra, and about two inches laterally, may elicit sensitiv areas.

Many "neuralgic pains" ar causd by aneurysmal pressure.

When the aneurysm lies just beneath the sternum and necrosis of the bone is beginning, the boring, nawing pain is localized.

One point I wish to bring out regarding the symptoms given for aneurysm. A neurasthenic, especially one suffering from visceroptosis, wil giv many of the symptoms caracteristic of aneurysm. If these symptoms ar relievd by the lifting of the abdomen, either temporarily by manual lifting, or by a properly adjusted abdominal support, we may reasonably infer that it is a case of *splancnic neurasthenia* rather than an aneurysm. A splancnic neurasthenic wil often describe his pains as "boring" or "nawing." Especially is this true if he has ever red of the symptoms of aneurysm.

Diagnosis

Unilateral swetting and change in the size of the pupils ar often symptoms of pressure upon the sympathetics. Pressure upon the neumogastric may cause vomiting and when upon the esofagus may cause dysfasia. Pressure upon the broncus may result in dyspnea, which is often paroxysmal in caracter. If the pressure is upon the superior vena cava, distension of the veins of the face and neck may result, causing cyanosis as wel as edema. Similar conditions of the lower extremities and congestion of the viscera may come from compression upon the inferior vena cava.

The diagnosis of aneurysm, in many instances, can be made from the symptoms. If the condition is aneurysmal, the symptoms ar usually accentuated after stimulating the lower four thoracic vertebrae, but ar mitigated after like stimulation of the upper four cervical vertebrae.

Another very good diagnostic maneuver is to suddenly lift and compress the abdomen from pubes up. If there is an aneurysm of the thoracic aorta the symptoms ar aggravated, but if of the abdominal aorta, the symptoms ar usually lessend for the time being.

Treatment

As in treating any other condition, look for the predisposing cause and try to remedy that. Rest in bed is the logical course to pursue, but as one patient remarkt, "Rest

means starvation, and I might as wel die of the aneurysm." The rational treatment is spinal stimulation.

Forcible extension of the hed (Fig. 195) *increases vagal tone* and is therefore indicated. This exercize can be taken several times daily, making about twenty to thirty extensions night and morning. Cutting down the liquids in the food, giving a minimum amout of salt, and keeping the bowels open, ar always to be prescribed for aneurysm.

I hav recently apparently cured a case of abdominal aneurysm by means of powerful radiant light—incandescent and quartz light and spinal stimulation along with zone therapy.

Soluble iodin or *calcidin* is considerd by many to be very beneficial.

From my experience I think the spinal stimulation givs excellent results.

The pulsoidal current or the slow-sine wave with the small applicator over the 6th and 7th cervical vertebrae, and the large one over the sacrum, seems to giv very good results.

Powerful radiant light and heat ar also great aids.

The magnetic-wave current, inasmuch as it is an equalizer of blood pressure, is also of much value.

Patients having an aneurysm of the thoracic aorta ar leading a comfortable life by receiving stimulation over the 6th and 7th cervical vertebrae, when they would be miserable without this treatment. This treatment wil not entirely obliterate the aneurysmal enlargement, but in many cases the patient wil be symptomatically cured or greatly relievd.

Several stimulation treatments over the 6th and 7th cervical vertebrae ar sometimes required before we ar able to notis a mitigation of the symptoms. For the vertebral stimulation, the pulsoidal current, the slow-sine current, or concussion can be used.

What wil benefit aneurysm of the aorta wil benefit aneurysm of any other vessel.

ZONE THERAPY is a method of treating aneurysm that often givs astonishingly good results.

ANGINA PECTORIS

Angina Pectoris is no doubt a terrible condition. It is often spoken of as a disease, but it is in reality a name for a

A group of symptoms. There ar two types, the true and the false (angina pectoris vera and seudo angina pectoris).

Probably the true type is caused by an atheromatous condition of the coronary arteries or a sclerotic change in them.

Some consider that these anginal attacks ar caused bv sudden anemia of the myocardium predisposed by sclerosis of the coronary arteries.

At any rate, whatever the cause may be, the condition is one fraut with great danger, and it must be so considerd. Treat the patient as for arterio-sclerosis but lay especial stress upon the fact that radiant light energy (incandescent and quartz light) over the cardiac region is of the utmost importance and wil giv the best results. Often anginal pains hav been relievd in a very few minutes by means of powerful radiant light energy. Then systemic treatment must be immediatelv instituted. The magnetic wave current is of great benefit in this condition.

It is hard to differentiate between the true and the false type of angina pectoris, but it is wel to treat this condition always as if it wer the true type and be on the safe side. It is too dangerous a condition to lightly pass over.

As a rule the anginal pains cause the patient to become extremely nervous and nervous prostration very often is one of the very first svmptoms we ar cald upon to treat.

As syfilis and gonorrea ar often the predisposing causes of this condition, the B-D-C method of diagnosis should always be employd and then treat according to the findings.

ANOREXIA

(*See Gastric Diseases*)

ANTHRAX

While Anthrax is very rare in this country, yet one might find such a condition. Immediate pathological examination by a competent laboratory would be necessary to diagnose the case, and then the physician would hav to be more than particular about handling it.

The quartz light for the local lesion is no doubt the best treatment that we hav.

For the toxemia that generally goes with anthrax, the combined powerful radiant light energy (incandescent and quartz light) is indicated.

APPENDICITIS

A

More cases of ordinary colic ar diagnosed as appendicitis than any other condition. Many conditions ar diagnosed as appendicitis which ar nothing more than an accumulation of gas in the cecum. Surgery has been made ridiculous by the insane manner in which every case of pain in the right inguinal region has been diagnosed as appendicitis. I think I am perfectly safe in saying that not one case in ten diagnosed as appendicitis is appendicitis.

I hav certainly had a good many cases of appendicitis to treat and some of them I know wer true appendicitis, but so far I hav never had to hav one operated on.

I hav been in consultation with cases where the appendix had ruptured and surgical operation was imperativ and in such cases advize immediate operation.

My method of treatment is powerful radiant light energy. I allow the radiation from the powerful incandescent lamp to fall over the appendicular area for from one-half to one hour at a time. If possible, I use the quartz light (beginning with one minute and increasing up to ten) along with the incandescent light.

I put the patient on a fast of from 24 to 48 hours and then allow only the most easily digested food for several weeks if need be.

If I think pus is present I use compression quartz-light treatment, especially with the quartz filter.

I know of many cases that hav now gone years without a recurrence, which wer diagnosed as appenciditis and "immediate operation to save life" advized.

THE APPENDIX

Recent observations by wel known scientists seem to show that the appendix is not "a useless organ undergoing degeneration," but that it is a valuable gland; and persons should think twice before having it removed.

Several years ago a wel known French scientist warnd the medical world that the appendix probably was undeserving of the present day contempt, yet he was unable to establish the possible function of this small and mysterious organ.

Scientists hav found that if they collect the mucous secretions from a large number of appendices and inject into animals the serum prepared from these secretions, the contractil movement of the intensins wil be augmented.

A When the gland is gangrenous or diseasd beyond repair, of course it must be removed, but *save the appendix when possible.*

ARTERIO-SCLEROSIS

Volumes hav been written on this subject and many physicians speak of arterio-sclerosis as a disease. We might as wel speak of a fractured arm as a disease. Arterio-sclerosis is a name of a *pathological condition.* It is a *result* of a morbid process and not a morbid process itself.

The pathology of arterio-sclerosis is not at all uniform, as it depends upon the exciting cause. A toxic arterio-sclerosis may follow syfilis, or any of the infectious diseases. Gonorrea is one of our greatest causes.

Senile arterio-sclerosis cannot be spoken of as a morbid condition, as it is a result of prolongd wear and tear. In other words, it is an *involutionary* form of arterio-sclerosis.

Another form of arterio-sclerosis is that which follows prolongd high blood pressure and is the result of excessiv stretching of the blood vessels.

For these various causes, different modes of treatment must be considerd, and, like every other pathological condition, we should treat the *patient* and not the condition. We must seek the predisposing cause and try to remedy that. First of all we think of dietetic mesures and elimination. For elimination I know of nothing that can compare with radiant light and heat. Auto-condensation from either a static machine, or a high frequency coil, is no doubt an aid, yet powerful radiant light wil do just as wel.

It is a question as to whether high frequency currents ar of as much value as radiations from the powerful incandescent lamp and the quartz lamp.

No doubt stimulants or narcotics of any kind, which include all forms of intoxicating liquors as wel as tobacco, ar predisposing causes to any form of arterio-sclerosis. Sometimes constipation for one day wil raise the blood pressure to a dangerous point. For this reason we must aim to keep the bowels open by mecanical means or salines. Probably megnesium sulfate or sodium fosfate ar our best general laxativs.

Another method of treating arterio-sclerosis is by spinal stimulation. Stimulation between the 3d and 4th thoracic vertebrae reduces high blood pressure by inhibiting hart action, as wel as dilating the blood vessels. Stimulation

of the 10th thoracic reduces blood pressure by dilating the periferal blood vessels. If we find cardiac weakness associated with arterio-sclerosis, stimulation of the 6th and 7th cervical vertebrae is indicated. A

In every instance where stimulation is mentiond, one can use the pulsoidal current, or slow-sinusoidal current, placing the small electrode over the vertebra indicated and the indifferent, large pad over the sacrum or abdomen; or they can use concussion.

I am having exceptionally good results in treating arterio-sclerosis by means of the combined radiations from the powerful incandescent lamp and the quartz, mercury-vapor lamp. I also use the magnetic-wave current in connection with the light.

ARTHRITIS DEFORMANS (REUMATOID ARTHRITIS)

Inasmuch as the etiological factor for Arthritis Deformans is stil unknown, it is a very difficult condition to treat, but there is no doubt that *fysical therapy* along with *dietetic mesures* givs the victim of arthritis deformans more hope than any drug or serum treatment known.

Some claim that the focus of infection for arthritis deformans is in the tonsils, and so advize the removal of the tonsils from a person suffering with this disease. This I consider *criminal practis*. I hav never seen a case of arthritis deformans helpt in any manner by removing the tonsils. In fact every case I hav seen has been worse after such barbarous treatment.

Another idea is that the infection is in the teeth. It was only recently that a young man came to me for diagnosis and treatment for arthritis deformans. In examining his mouth, I found every one of his teeth had been extracted. He told me that some "specialist" had told him the year before that his trouble was causd by infection in his teeth, altho he never had had an unsound tooth to his knowledge, and not one had ever been fild. Nevertheless thirty-two perfectly sound teeth wer extracted and false teeth put in. Insted of making the symptoms better, they continued to grow worse. I consider that anyone who advizes the extraction of sound teeth in this manner is unfit to practis medicin and his license should be withdrawn.

A Others seem to think that the focus of infection is the nasal sinuses and they hav punctured them, cut them and curetted them all to no purpose.

Others wil say the site of infection is in the ovaries, and I suppose thousands of ovaries hav been removed for this condition, but never hav I seen a case helpt in any way by this mutilation. They hav always become worse so far as I can ascertain.

Others hav said the site of infection was the gall bladder or the appendix, and it is no uncommon thing to see the appendix removed for it, and in some cases I hav seen the gall bladder removed to "cure" arthritis deformans. The latest seems to be that the intestins ar too long and some ar advocating the cutting out of part of the intestin as a remedy for this condition. I believe the only place for persons advocating such treatment is in the insane asylum, and in close confinement at that.

The prolongd rest in bed and a very limited diet such as a person sometimes receives after a major operation wil often relieve the *symptoms* of reumatoid arthritis for some time, but it is not necessary to mutilate and cut to pieces in order to hav a rest and limited diet.

In the first place we nearly always find a highly acid urin in a person suffering with reumatoid arthritis. Cut out all meat and giv a very carefully regulated diet of vegetables—lettis, celery and spinach. Many times a milk diet is very beneficial while at others it aggravates the condition. Giv *sodoxylin* (Abbott) to reduce the acidity. I find it is the best single remedy for reducing acidity in the urin. Be sure that the bowels ar kept open and that the body is kept wel bathed. I hav found epsom-salt baths to be very helpful. Of course examin the teeth. In fact, examin all parts of the body and where anything seems wrong, hav it rectified, not by abstraction or mutilation, but by carrying out all sanitary procedures. If any of the sinuses in the hed seem to be affected, use the Quartz Light. That is no doubt the best modality for infected sinuses that is known at the present time. If the tonsils ar in any way affected, *treat* them but do not cut them out. If the teeth ar in good shape, see that they ar properly cleand and by proper diet the tartar, which is generally found on the teeth of anyone suffering with reumatoid arthritis, wil not re-accumulate. An alkali preparation should be used for cleaning the teeth.

Examin the patient carefully and see that the sfincters ar not contracted. The rectum should be carefully examind. Many times an eroded condition about the sfincter wil be the focus that seems to be the cause of reumatoid arthritis. Some cases suffering from this condition wil rapidly improve and get wel if the rectum is made wel. This is probably best done by local applications thru a sigmoidoscope; but it can be done, altho it takes longer, by means of the bipolar rectal electrode and the pulsoidal current thru the rectum.

Watch the gall bladder. Often people suffering from arthritis deformans wil hav a sensitiv gall bladder. Treat that with the big light and the quartz light. I hav had some patients whose painful symptoms and progressiv deformity ceast within two weeks after thoroly treating the gall bladder by means of the combined powerful radiant light therapy, at the same time carrying out proper hygienic mesures.

For the pain that is often found in this condition, powerful radiant light and zone therapy should be given the greatest prominence. As the real cause of reumatoid arthritis must be impaird or perverted trofic nervs, electric light baths and powerful radiant-light energy, as wel as the quartz light, ar indicated. The magnetic wave current I hav found to be a very beneficial auxiliary in treating this condition.

For the deformity careful massage, powerful radiant energy, and the pulsoidal current or the slow-sinusoidal current ar helpful. As I hav never seen the deformity of arthritis deformans entirely remedied, I do not know of any mesure that wil entirely accomplish this result. All we can do is to help them.

The pulsoidal current thru dishes of water, as illustrated in Figs. 256 and 257 is no doubt a great aid when the pain or deformity is in the feet, ankles, hands or rists.

Mud baths ar recommended by some very highly for this condition but I do not think their efficacy can be compared with that of electric-light baths. I think the good effects of the "mud bath treatments" is not so much from the mud as from the change of scene and change of diet. The *mental condition* of one suffering with reumatoid arthritis has a great effect upon the condition. There is no doubt about this. It is for this reason that so many persons hav apparently been cured by some faith cures when all

A other remedies had faild. The mental condition wil change metabolism and a changed metabolism must go with any disease, or there would be no disease.

ASTHMA

This condition seems to be affected by heredity as much as any other. We hardly ever see asthma in any one not of a neurotic type. Even if asthma is a sequel of an injury or of cardiac disease, it is nevertheless the sequel of a neurotic condition. In others words, asthma seems to be preceded by a neurotic condition, inducing some reflex.

First, try to find the predisposing cause and eradicate that as much as possible.

One of the best treatments for *bronchial asthma* seems to be stimulation of the 4th and 5th cervical vertebrae.

For *cardiac asthma* stimulation of the 6th and 7th cervical vertebrae is one of the modalities to be thot of.

For the stimulation of the vertebrae, the pulsoidal current or the slow-sine-wave current can be used. Two sponge electrodes can be used, one on each side of the vertebrae or one sponge or clay electrode can be placed over the vertebrae named and the indifferent electrode can be placed over the sacrum or over the abdomen, or held in the hands.

If the slow-sine-wave current is used, try to regulate the speed so the interruptions ar four times the respiration of the patient.

Concussion over the named vertebrae can also be used, having the concussode that givs stimulation on each side of the spinous process of the given vertebrae.

Zone Therapy is probably one of our best remedies for asthma of either the bronchial or the cardiac type. Probably the best method of using zone therapy is to make the "attack" at the posterior wall of the naso-farynx, using either the pulsoidal current or the non-electrical probe.

For the *general treatment* of asthma of either type, we must enforce wel the dietetic and hygienic mesures. Very often calcium chlorid or other salts of lime, given over a long period of time, has a selectiv action in the treatment of asthma.

Electric light baths; radiations from the powerful incandescent light; the quartz light; the magnetic-wave current; oxygen-vapor inhalation along with the B-D-C therapy, ar all to be considerd.

Traction of the spine in some cases of asthma works like magic.

CAUTION: *Do not use adrenalin in any form for asthma as it almost always renders the condition worse.*

Discourage the use of dope nasal sprays and vapors.

In the majority of cases of asthma, no matter of what type, we find *visceroptosis*. Therefore any mesure that is indicated in visceroptosis is also indicated in the asthmatic condition.

To illustrate how important it is to serch out the predisposing cause, I think it wel to cite here two or three cases.

CLINICAL CASES—ASTHMA

Case 268

Single lady, 35 years of age. Had been suffering with asthma for several years. She was sent to me for diagnosis, as tuberculosis was suspected. Upon examination, I found she had a normal MM VR and therefore I excluded tuberculosis, syfilis, or other constitutional intoxication.

I then examined her from hed to foot, including the navel and the sfincters of the anus and vagina. I also made a careful examination of the clitoris and found that was in normal condition. The hymen I found very much contracted and very unyielding. As soon as I attempted to enter my index finger thru the hymen, the lady had a paroxysm of coffing. That gave me the cue and I at once ruptured the hymen and dilated the sfincter vaginae with my three fingers. *This lady has not had an attack of asthma since, and no other mesures wer taken for treating her.*

Case 269

A single lady 50 years of age had sufferd for years with "asthmatic cof." She had been the rounds of diagnosticians thruout the country but none gav any diagnosis except a "neurosis."

Upon examination I found that she had an aneurysm of the abdominal aorta and that the attacks of asthma wer induced by making sudden pressure upon this aneurysm.

Case 270

A single lady 22 years of age had been suffering with asthma for about two years and tuberculosis was suspected. Upon diagnosis I found she gave a normal MM VR and so ruled out tuberculosis. Upon a thoro examination, I

A found the sfincter ani very much contracted and when I attempted to insert my index finger, she had a spasm of coffing. Careful dilation of the sfincter, along with the carrying out of general hygienic and dietetic mesures, cured this lady of the asthmatic condition.

Often asthmatic attacks ar caused by irritation about a hooded clitoris or by irritation in the navel, but I think the most peculiar reflex condition I ever saw was responsible for the following case:

Case 271

Single lady 52 years of age. Had occasional attacks of asthma which had been tormenting her for many years. She had searcht for relief in all parts of the country and had tried all kinds of treatments, but nothing relievd her. She would go for days without one of these attacks and then would suddenly hav one without any warning and it would last several minutes.

"Incipient tuberculosis" was the general diagnosis altho this lady gave no outward sign of tuberculosis.

When I examind her, I found she had a normal MM VR which excluded tuberculosis. After I had examind her from hed to foot, including sfincters and navel, I could find nothing to giv me the slightest cue, and was about to giv up, when I thot I would examin her toe nails and finger nails to see what lifting them up would do. After I had lifted each of the toe nails I took the finger nails. I lifted the nail of each finger of the left hand then went to the right hand. When I lifted the nail of the index finger of the right hand, the lady had a spasm of coffing. I said nothing but waited until the paroxysm had past and then took the other finger nails of that hand. Then I went back to the index finger, and again the paroxysm of coffing started and continued for two or three minutes.

I askt her if that was the kind of coffing she had been having all these years and she said it was. When I began to question her carefully, I found that it was when she was doing certain kinds of work, like the turning of a bed mattress or other work that might make pressure upon the ends of her fingers, that brot on the paroxysms of coffing. She said she had to giv up playing on the piano because she would suddenly hav attacks of asthmatic coffing while she was playing.

I found that by cutting the finger nail down very closely she had no paroxysm of coffing, and as long as it was kept closely cut she had none, but if it grew out at all long, she would occasionally hav the paroxysms of coffing. A

I took two dishes of water, attaching one pole of the pulsoidal current to each of the dishes of water, and had her put a hand into each dish. As soon as the current was put on she had paroxysms of coffing and told me that the sensation in her throat was as if she wer inhaling sulfurous fumes. I askt her if that wer the sensation she had in her throat when I lifted up the nail of the index finger of the right hand, and she said it was. No other fingers gave any such reflex.

I do not know as there is any cure for any such condition without paralyzing the nerv leading from the ungual surface of the finger. This I did not attempt to do but told her to keep the finger nail closely cut, and by following out this advice she has had no more trouble from "asthmatic attacks."

This case wil give some idea of the care that is necessary in hunting out the *cause* of asthma.

To illustrate how neurotic conditions predispose to asthmatic attacks, I might cite the following case:

Case 272

Man 41 years of age. Had had asthmatic attacks for years. He found no relief no matter where he sought it, and had been driven "from pillar to post" hunting new physicians. When I examind him I found he had a very inflamed conjunctivva, and upon inquiry as to his vocation, lernd that he was a draftsman and did mecanical work which required very close application.

As this patient gave a normal MM VR, and I could find no other predisposing cause, I concluded that the trouble came from an eye strain which predisposed to a neurotic condition. I advized a change of occupation so that his eyes would hav no special strain, and also the wearing of properly fitted glasses. He followd out this advice and since then has had no more asthmatic attacks.

Many times *worry* wil predispose to asthmatic attacks. There ar some individuals whose asthmatic attacks ar always an index of their business prosperity. If business is good, they wil hav no asthmatic attacks, but if business is poor, asthma runs riot.

There is no other condition that I can think of that requires more careful serching for the cause than does asthma.

Case 273

Mrs. S. Age 60. No children. Sufferd from *asthma* for years. I gave powerful light over chest and back, 10 minutes each, daily for a week, and oxygen-vapor inhalation for 20 minutes each day. For six weeks she had no inconvenience from the asthmatic trouble, then had a slight return. I exhibited light as before, three times, and gave oxygen-vapor for about a dozen treatments. For two years, there was no return of the trouble, after which time I lost track of her.

T. A. Klingensmith, M. D., Jeannette, Pa., under date of Dec. 26, 1917, says:

"Many cases of *asthma,* which before I hav never been able to relieve I now relieve by simply diagnosing *splancnoptosis* and relieving that. Nearly every case of asthma that I hav (and I hav a good many) is suffering from *splançnic insufficiency.*

"In all cases of splancnoptosis, I apply a suitable support (I use Valens). For treating the general condition, I use radiations from the powerful incandescent lamp, along with oxygen-vapor therapy and B-D-C therapy.

"Before utilizing your method of air-colum percussion or dual-puls system, I was never able to diagnose splancnic insufficiency. Now I am having success with my old asthmatic cases that I hav never had before."

AUTO-INTOXICATION

(*See Part One, Lecture XVIII*)

B

BACKAKE

(*See Reumatism and Lumbago*)

BED WETTING

(*See Enuresis*)

BILE DUCTS—DISEASES OF

Diseases of the bile ducts should be treated the same as diseases of the liver. (*See Liver.*)

BILIOUS ATTACKS
(*See Jaundis*)

For bilious attacks probably podofylin and saline laxativs ar the best internal remedies. My plan for giving these is to giv six one-sixth grain podofylin (Abbott) one-half hour apart in the evening. This to be followd in the morning by a very effectual saline laxativ (Salithia-Abbott).

Then it is best to regulate the diet by beginning with a twenty-four hour fast. Carefully regulate the diet. Almost always milk has to be prohibited in treating this condition.

Horlick's Malted Milk can usually be borne.

Powerful radiant light energy over the liver region as wel as over the entire body is often very effectual.

The quartz light seems to hav a specially good effect on this condition.

BLADDER, INFLAMMATION OF
(*See Cystitis*)

BLEFORITIS
(*See Eye*)

BLOOD PRESSURE

More and more clinicians ar realizing the importance of taking the blood pressure of every new patient and recording it, and keeping watch of the blood pressure when it seems to be abnormal.

The dial or aneroid instrument is probably more popular because of its convenience than the *mercury sfygmomanometer,* but for accuracy the mercury instrument is by many considerd superior.

For an offis apparatus the special sfygmomanometer illustrated in Fig. 69 is one of the best instruments.

For the aneroid type, probably the 1918 model of the Tag-Roesch Sfygmo-Manometer is one of the most accurate and perfect blood pressure gages ever made. This instrument is illustrated in Fig. 378.

Another aneroid instrument that has proved to be very satisfactory is the Tycos, shown in Fig. 379.

Stil another, which some think is very efficient is the Faught-Pilling, shown in Figs. 380 and 381.

B The *auscultatory method* for taking blood pressure far excels the old method of palpation.

Fig. 383 shows the "*bracelet*" stethoscope which I use and like very much.

Fig. 382 shows the method of using this "bracelet" stethoscope in taking blood pressure.

All instruments for taking the blood pressure ar based on the same principle, that is, that the tension of a fluid in motion is in proportion to the force necessary to raise the flow. One very good point to remember in taking blood pressure is that the cuf should be on a level with the hart and at least five inches wide. The narrow cufs ar not at all reliable. The stif, ribd cuf, is superior to the cloth style.

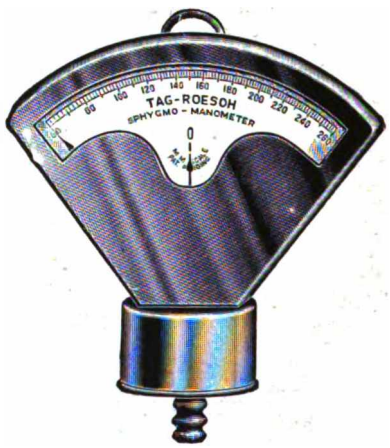


Fig. 378. Showing the 1918 model of the Tag-Roesch Sfygmo-Manometer manufactured by C. J. Tagliabue Mfg. Co., Brooklyn, N. Y.

I hav found this instrument to be one of the most accurate and perfect blood pressure gages of the aneroid type ever made. The improved type of escape valv used with this instrument permits of easy observation of the varying pressures when taking diastolic readings.

The general design is no doubt more convenient than the watch pattern. Its powerful diaframs cannot be inflated beyond the maximum indication while the *zero hand*, showing a true zero, is an indication that the instrument wil always giv a correct reading. All springs and gears being eliminated, the readings of the instrument must remain constant for all time.

By the auscultatory method we ar able to definitly mesure the *diastolic pressure* as wel as the *systolic pressure*, and from these two findings we can get the *puls pressure*. Normally the systolic pressure can be mentiond as 3/3, the dias-

tolic at 2/3 of the systolic, and the puls pressure 1/3 of the systolic. In other words, *the sum of the diastolic pressure and the puls pressure wil equal the systolic pressure.* The puls pressure is obtaind by subtracting the diastolic pressure from the systolic. As a rule, the systolic pressure ranges in helth from 120 to 140, or a mean of 130 mm. of mercury. From this, it is very easy to calculate what the systolic pressure and the puls pressure should be. B

In taking the blood pressure by the auscultatory method, raise the mercury higher than the blood pressure is supposed to be, and then let the air escape slowly from the bag until

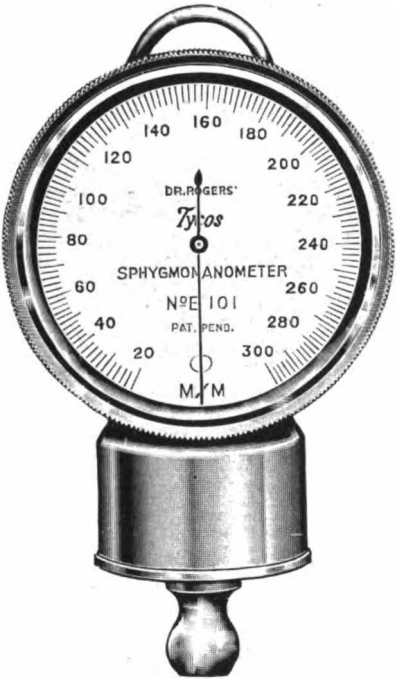


Fig. 379. Shows the Tycos Sfygmo-Manometer manufactured by the Taylor Instrument Companies, Rochester, N. Y.

This has jeweld bearings similar to those used in a high grade watch. It also has a self-verifying feature so the operator knows at a glance whether or not his instrument is correct.

The manufacturers claim that the dial of each instrument is individually standardized to agree with the pressure resistance of its own set of diaframd chambers.

The instrument works on the principle of *expansion* of diaframd chambers rather than by compression. This is a very important feature that some aneroid instruments do not possess.

B the first, clean cut snap, *that is followd by pulsations,* is herd. This is the *systolic pressure.* Now let the air continue to flow out until no beat is herd, and that marks the *diastolic pressure.* The difference between the two is the *puls pressure,* and that is divided up into four or five fases, which I wil not dwel upon. They can be found in any modern blood pressure book. A very good hand-book on blood pressure is that by Dr. Faught, publisht by George P. Pilling & Son Co. of Philadelphia. The last edition is the only one to consult.

The *mean pressure* which is many times spoken of, is obtaind by adding one-half of the puls pressure to the diastolic pressure.

Dr. W. R. Sheldon has workt out a system of studying blood pressure which seems to be quite complete. He multi-

Fig. 380. Showing the Pilling-Faught aneroid type Sfygmo-Manometer.
Fig. 381. Showing the Pilling-Faught Sfygmo-Manometer in a pocket carrying case.

plies the systolic pressure by the puls *rate* and calls that the *work.* He multiplies the puls *pressure* by the puls *rate* and calls that the *velocity.* The ratio between these two products should be as 1 to 3. In any lesion of the arterial system there wil be a discrepancy, and the nearer the ration of 1 to 3, the nearer the patient is to helth.

When taking the blood pressure, take it as rapidly as possible, as the pressure wil rise from the constriction of the arm band after two or three minutes.

In recording blood pressure, be sure that you take it about the same time of day from the same arm and in the same position, that is, with the patient either sitting up or lying down each time. *Also see that they ar facing in the*

same direction as regards the compass and hav them grounded. B

There is a rise in blood pressure in sitting upright from the recumbent position when there is splancnic equilibrium, but if the individual is fatigued or has splancnic insufficiency, there is a drop of from 10 to 20 mm. pressure after arising from the recumbent position. In other words the pressure taken in the upright position wil be 10 to 20 mm. lower than when taken in the recumbent position.

Immediately after eating there is hyper-tension. Within an hour after there is hypo-tension, which in about five hours after eating goes back to normal. This must be rememberd when accurately recording blood pressure.

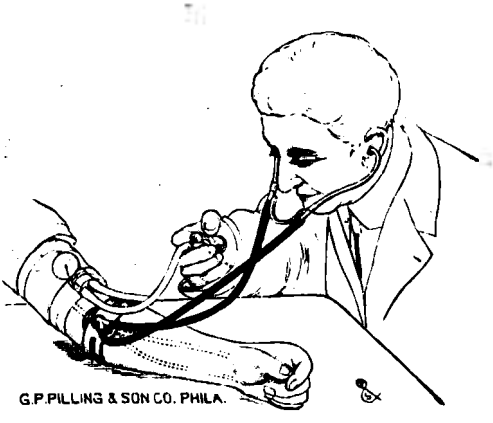


Fig. 382. Shows the relation of Sfygmo-Manometer and Bracelet Stethoscope arranged for the auscultatory blood pressure test.

Many wil say that tobacco has no special influence on blood pressure, but I hav proved by many tests that tobacco has a *very decided* influence in increasing blood pressure, due to the absorption of some toxic agent. I hav seen a rise of 40 mm. of mercury within half an hour after smoking a "first-class" cigar. If a person smokes thru cotton or water, there is not so great a rise in blood pressure.

Chewing of tobacco has a very bad effect on the arterial system.

Inasmuch as alcohol has a tendency to degenerate the arterial system, it also enhances the blood pressure.

B Syfilis as wel as gonorrea has a degenerating influence on the arterial system and so enhances the blood pressure or makes it sub-normal.

I hav often notist that *pain increases blood pressure*, and mental agitation wil do the same. I had a patient with high blood pressure who became excited one day while talking over the 'fone, and immediately had a stroke of paralysis from which he never recoverd.

As a rule there is about 20-mm. fall in blood pressure just before menstruation. It reaches its lowest level about the second day and is normal about the fourth day.

High blood pressure is often a serious fenomenon and nearly always points to a kidney lesion, whether there ar signs in the urin or not. In other words, whenever the blood pressure runs over 150 mm., cronic nefritis should be suspected. We sometimes hav nefritis without a high blood

Fig. 383. Showing the Bracelet Stethoscope manufactured by G. P. Pilling & Son, Philadelphia. This stethoscope is one of the most convenient made for the auscultatory blood pressure test.

pressure, and I hav treated patients with true albuminuria and granular casts, with a blood pressure of 120 or less.

Hypo-tension is seen in most acute infections, as wel as in cronic wasting diseases, such as carcinoma and tuberculosis. It is also encounterd in many nervous diseases as wel as tachycardia and dilatation of the hart, anemia, and in late alcoholic and tobacco intoxications. Hypo-tension is also many times seen in arterio-sclerosis.

In *aortic insufficiency* it has recently been establisht that when the patient is in a recumbent position, the blood pressure in the leg is from 20 to 80 mm. higher than in the arm. For this test the dorsalis pedis artery or the posterior tibial can be used.

I hav been able, by means of recording instruments, to prove that the blood pressure differs in a grounded per-

son facing east or west from that when he is facing north or south. Many of my pupils hav sent reports of this change. The tecnic has been workt out and the most skeptical cannot dispute it, if they wil carefully carry out the instructions in making the test as set forth in Part One. B

Blood Pressure Therapeutics

High blood pressure is remedied by the following fysical methods—binocular electrotherapy (pulsoidal current, using one pole over the eyes and the other over the 2d and 3d cervical vertebrae); stimulation between the 3d and 4th thoracic vertebrae or the 10th thoracic vertebra by means of the pulsoidal current, slow-sinusoidal current, or concussion; electric light baths; radiations from the powerful incandescent lamp as wel as from the quartz, mercury-vapor lamp; oxygen-vapor therapy; static or high frequency electricity; magnetic wave current; dietetic mesures.

Another method for treating high blood pressure is often spoken of and that is the drinking of "radio-activ water." From my experience, I cannot say that this is any better than "ambereau" which is water exposed to the sunlight for 6 to 8 hours in an amber bottle. I prescribe about a pint of this a day to be used in place of any other water.

High blood pressure is usually associated with kidney lesions. Therefore appropriate mesures should be taken to remedy that condition.

Low blood pressure is remedied by binocular electrotherapy, placing one electrode over the eyes and the other over the 2d and 3d cervical vertebrae; by stimulation of the 6th and 7th cervical vertebrae by means of the pulsoidal current or concussion, which increases vagal tone and helps wonderfully in equalizing blood pressure.

Powerful radiant incandescent light and quartz light ar great aids in normalizing blood pressure.

Oxygen-vapor inhalation along with B-D-C therapy, inasmuch as it acts upon the sympathetic system and consequently upon metabolism, is very helpful in equalizing blood pressure.

Deep abdominal breathing is an equalizer of blood pressure and I use this along with oxygen-vapor inhalation.

Whenever the blood pressure is lower when the patient is sitting than when lying down, it points to splancnic in-

B sufficiency. The treatment for that is spoken of under Splancnic Insufficiency.

Low blood pressure is generally associated with splancnic insufficiency, neurasthenia, tuberculosis, or cancer, as wel as in gonorreal intoxication. Therefore one must look to the cause and try to remedy that.

Observation

I believe as a rule there is a misconception among practicians regarding the blood pressure of a person 30 years old, 40 years old and so on up to 70 or 80 years old or more. I often hear physicians say that they expect a person to hav blood pressure of 160 or 180 if they ar past 60 years of age altho below 50 they expect it wil be about 140. I hav also herd many experienst physicians make the remark that they did not see any need of trying to rectify the blood pressure of a person past 60 unless the blood pressure ran abov 160. This I am convinst is a grave error. Many patients continue having an increast blood pressure just because their physician has not advized them on this point.

I can see no reason why a person should hav a high blood pressure because of age, unless there is something wrong with his habits or unless there is some abnormal condition taking place in the vascular system.

If a person's blood pressure begins to rise after he is 40 or 50, it is high time to prescribe such hygienic procedures as wil keep the blood pressure down. This often can be done by cutting out meat and sweets, alcohol, tobacco, etc. I can recall many a case of people past 60 years of age in whom the blood pressure was over 160, and because of the misconceivd idea of their physician they had not been advized about their habits and died of apoplexy. This I believe could hav been avoided had the physician advized the patient intelligently.

Clinical Case: Blood Pressure

Case 274

A man 60 years of age. Blood pressure 220. One electrode was placed in his hands and the other electrode was the binocular sponge electrode attacht to a handle and placed over the eyes (Fig. 251). The rate of this man's puls

was about normal, according to his respiration, which was 18; so I set the speed of the Interrupter at 72. Within fifteen minutes his blood pressure was 160 and the rate of the hart was 70. B

Directions for Sleeping

A person with high blood pressure should, as a rule, sleep at right angles to the MM while one with a low blood pressure should sleep parallel to the MM. *Grounding the patient* while they ar sleeping aids materially. I find that a small copper wire stretcht across the mattress below the under sheet and attacht to a water or gas pipe, is a very effectual method of grounding one in bed.

I know that many speak disparagingly regarding the direction in which one should sleep. They say that there is no proving that one direction is bettér than another, and that it is all imagination, etc.

Every method that is simple and off the beaten path has been ridiculed. Sleeping in different directions has been advized empirically for years, no one seeming to hav any definit idea as to why it was beneficial. I want to say emfatically that I *know* that the direction in which one sleeps and the grounding of the individual while in bed, as outlined abov, is beneficial in many conditions. Under the hed of *Insomnia* more is said about this.

I wil mention one or two particular cases. Recently a stranger cald on me and said he had come to shake hands with me and thank me for what I had done for him. Inasmuch as I had never seen him before and he appeard to be sane, I wonderd just what he ment. He told me he had red in some magazine something that I had said regarding the direction in which to sleep. He said he had followd the advice and it had done him more good than all the sanitaria he had ever visited on this side of the water or on the other side. If this wer imagination, it certainly was good imagination.

I hav taken children who wer not doing wel and changed the direction of their crib according to the direction I thot was indicated and the children became wel, the improvement beginning almost immediately after the change of the crib. That certainly could not be imagination.

In animals I hav seen this tried out with very beneficial results.

B No one would think of condeming a wel recognized "old theory" because it did not work on one or two individuals. Then why not giv simple, natural methods just as fair consideration?

BOILS

(*See Furunculosis*)

BREST

Mammary Secretion

To *increase* the flow of milk in a nursing mother, use stimulation over the 3d and 4th thoracic vertebrae. This can be accomplisht with the pulsoidal current or concussion.

Many times the slow-sinusoidal current or the *pulsoidal current,* when used *per vaginam* by means of my special vaginal electrode having the indifferent pad over the abdoment, wil increase the flow of milk without any other procedure.

Instruct your patient to drink copiously of pure water.

Radiations from the powerful incandescent lamp, directed over the brests, wil also increase the flow of milk.

Autotherapy wil also increase the flow of milk.

Galvanism, placing the clay pads over the two brests and having the negativ pole attacht to them while the positiv pole is attacht to an electrode placed over the 3d and 4th thoracic vertebrae, wil many times increase the flow of milk very rapidly.

To *decrease* the flow of milk, use positiv galvanism over both brests simultaneously. Use the clay pad over each brest and over that the sand pad. For protecting the nipples, place rubber tissue or some other non-conductor of electricity over them. Either one large electrode can be used over both brests at one time, or two separate clay pads can be used. When two ar used, connect them up with a bifurcated cord to the positiv side of the generator and hav the indifferent electrode placed over the abdomen.

Along with this treatment some advocate the use of potassium acetate, 20 grains to be given three times daily. Avoid the use of atropin if possible, unless given homeopathically.

Reduce the amount of fluids ingested.

Pumping the brests where there is an over-supply of milk or where mastitis is threatend is described under the hed of Mastitis. B

Clinical Case—Milk Increase

Case 275

Mrs. K. About 35 years of age. Had a baby six weeks old and came to me as she did not hav enuf milk for the baby. I placed metal electrodes, connected to a bifurcated cord, in the hands and the spong electrode between the 3d and 4th thoracic vertebrae. I made the speed of the Interrupter four times her regular respiration. Gave this treatment for 10 minutes on three consecutiv days, after which time her milk was doubled in quantity.

Mastitis

Inflammation of the mammary gland is often found in nursing women, especially when they ar weaning the infant. Every physician has been taut that hot boric acid compresses is the treatment par excellence for this condition.

Some time ago I reported to some of my pupils some cases of mastitis that I had treated very successfully by means of the powerful radiant light. Since then several hav used this modality insted of hot compresses and the results ar more than flattering. They universally report that the hardend gland yields more quickly to radiant-light therapy than to any other method they ever tried.

The tecnic for this work is to allow the radiations from a 2,000 or 3,000-candle-power incandescent lamp to shine directly over the affected brest for at least half an hour at a seance. The lamp should be from 28 to 36 inches from the gland while giving the treatment. After the first treatment with the light, gentle massage is beneficial, massaging toward the *base* of the gland. I find it is wel to hav the hands lubricated while giving this massage treatment. For the lubrication I use terpene peroxid and oliv oil, about half and half. Do not begin massaging until the light has been shining on the gland for 15 or 20 minutes. Then use a little of this oil mixture on the hands as a lubricant and massage gently. *Iodex* can be used in place of the terpene peroxid and oliv oil mixture. If the baby is not yet weand, use oliv oil as a lubricant.

The most stubborn case of mastitis wil generally yield to this treatment within forty-eight hours. Many wil be relievd and even cured with one treatment. If it is a very bad case, the light should be left on for at least an hour.

The eyes of the patient should always be protected while using this powerful radiant-light therapy. If the radiation of the light and heat is liable to produce hedake, a wet towel may be placed on the hed.

In any case of mastitis, make it a rule to clear the bowels out wel as soon as the case presents itself. For this purpose I would recommend salithia manufactured by the Abbott Laboratories, Chicago.

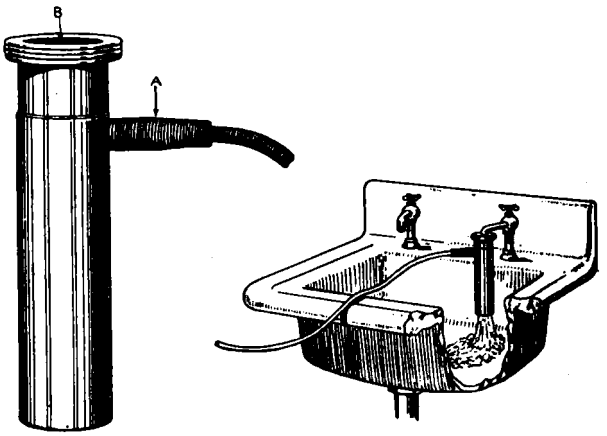


Fig. 384. Showing water-faucet attachment for giving Hyperemic Treatment. *A* is reinforcing tube to prevent long sunction tube from "kinking." *B* is interchangeable bushing to fit any style faucet.
This device is manufactured by Blackstone Mfg. Co., Toledo, Ohio. Many other similar devices ar on the market.

Pumping the Brests

Fig. 384 shows a device for producing negativ pressure by means of a water-faucet attachment, which is a modified aspirator. This device, or one similar, is ideal for pumping the brests.

Fig. 385 shows bel jars and suction cups as wel as the attachments I use for hyperemic treatment.

The *tecnic* for pumping the brests with this apparatus is to hav the patient lie on a table under a big lamp if possible, as shown in Fig. 386. The large twin-bust jars, illustrated in Fig. 385 ar placed over the two brests and the

suction device attacht to a water faucet, as shown in Fig. 384. When the water is turnd on, negativ pressure wil be produced in the bel jars and the milk wil be pumpt out of the brests in a most remarkable manner. This is a wonderful method for pumping the brests when they cannot be pumpt by any ordinary method, and the two brests can be pumpt dry in about five minutes. *Lumps in the brest* caused by an engorgement of the lacteal ducts, often seen in nursing mothers, can be relievd by means of the big light and this hyperemic treatment in a manner that wil astonish the novis. B

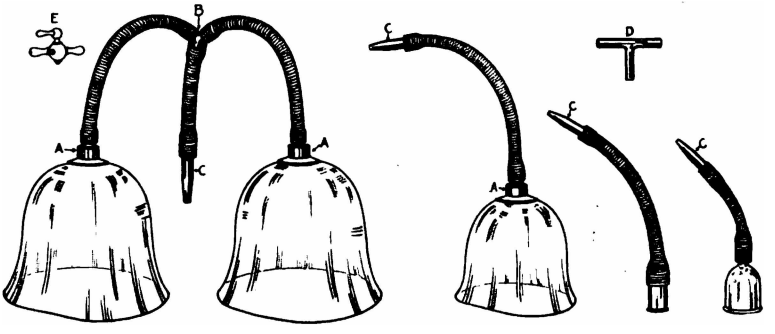


Fig. 385. Showing glass suction cups arranged to be used with the Blackstone Water-faucet Attachment, or any other similar device. The large ones ar for use on the brests, for Bust Development or for Brest Pumping or for Mastitis. Small cups ar for use over boils, etc.

The T-Tube *D* is for attaching to tubing so two patients can be treated at one time from one Faucet attachment.

The air stop-cock *E* can be cut into each Bell-Jar tubing as desired.

B is a Y-tube. *A* is metal nipple to attach jar to tubing. *C* is metal coupling to attach cups or jars to suction tube.

Fig. 387 shows how the brest pumping can be done with patient sitting up.

I hav had cases referd to me where the milk ducts about the nipple seemd to be entirely closed and no ordinary brest pump would hav any effect upon them. The patient would be in great pain. I would put them under the big lamp for about half an hour and then put on the bel jars. The milk would begin to flow in both brests simultaneously within a few seconds and the comfort experienst by the patient could not be exprest in words. A dampend cheesecloth can be used for taking up the milk when the jars ar removed.

B This hyperemic treatment along with radiations from the big light wil *increase the milk supply.*

I believe this method of treatment is original with me, but my success has been so markt that I want to call attention to it. There ar certain conditions of the brests in which

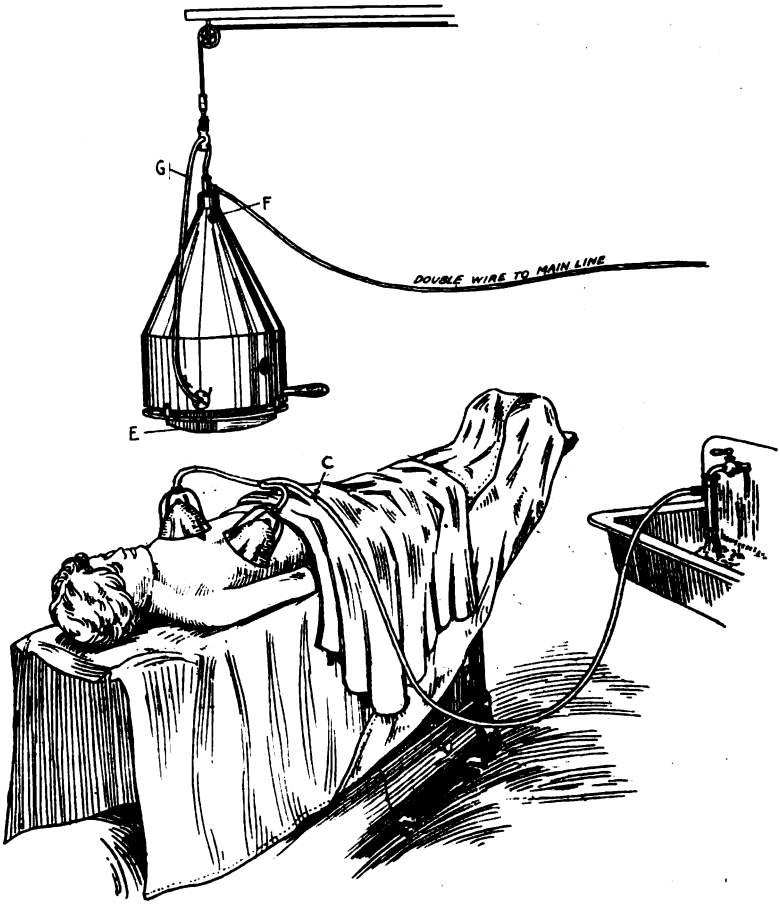


Fig. 386. Showing how the twin-bust jars can be used along with the Big Light for Bust development or for treating Mastitis or for Pumping the Brests.
The lamp is about 36 inches from the patient's skin.

the brest pump seems to shut off the flow, but with a large bel jar like the ones illustrated in Fig. 385, suction is made over the *whole brest* and not about the nipple only.

These bel jars come in all sizes so they can be had to fit any size brest. They can be procured thru any physicians' outfitter. B

I want especially to call attention to the style of bel jar here shown as there ar several kinds made. The kind with a glass stem is very fragil and I would not advize anyone to get them. The kind shown in this figure has a metal nipple to which is attacht the rubber tubing. This metal nipple is cemented to the glass jar. Such bel jars as these ar very durable, but they cost more than the other kind.

The *T* metal tube that is shown in Fig. 385 can be procured from any physicians' outfitting house or can be made

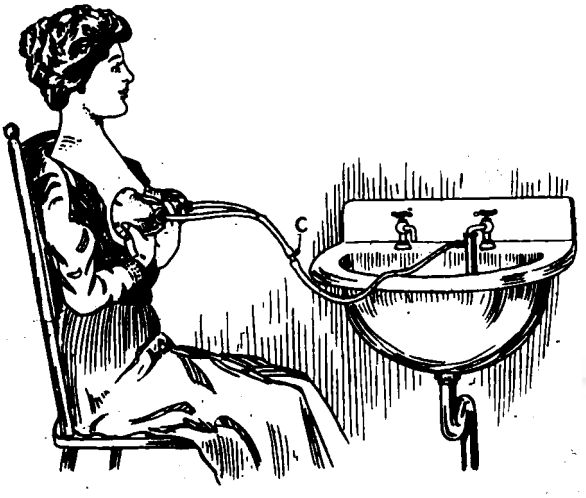


Fig. 387. Showing how the twin-bust jars can be used while patient is sitting up. This position can be used either for Bust Development or for Pumping the Brests.

by any good mecanic. By means of such a *T*-tube cut into the suction tube, two patients can be treated at the same time.

This illustration also shows a single bel jar which can be used alone.

It wil be notist that there is a metal connection tube to the free end of the short rubber tube attacht to these glass-jar cups. This piece of metal tubing is for attaching the cup or jar to the rubber suction tube of the water-faucet

B attachment. By means of such an attachment the cups or jars can be cleand in a sanitary manner.

The very small glass cup shown in the illustration is especially valuable for treatment about the clitoris.

The Quartz Light is also very beneficial in the treatment of mastitis. It in conjunction with the powerful incandescent light is the treatment *par excellence*.

Benign Enlargements in the Brest—Treatment For

(It is understood that the patient has been carefully examind by the Bio-Dynamo-Chromatic method to know whether the condition is benign or malignant.)

Hyperemic treatment for the brests is not only useful in pumping milk from the brests, but it is very useful for reducing many of the so-cald tumors in the brests which ar really only localized congested areas. Such "lumps" in the brests ar often diagnosed as cancer and ruthless operations ar performd. In this book ar mentiond many instances where patients hav been referd to me for "cancer of the brest" and I hav diagnosed the condition as benign and cured it in a very short time by means of hyperemic treatment in connection with powerful, radiant light energy.

The tecnic for this work is very wel illustrated in Figs. 148 and 386.

In treating the brests, I like to use the powerful light for about 10 minutes before applying soluble, stainless iodin (iodex). Then I anoint the brests wel with the iodin preparation before applying the bust jars, either one or two together, as shown in Fig. 386. I then allow gentle suction to procede for about 20 minutes, bringing about a very profound hyperemic condition of the brest. All the time this suction is going on, the powerful incandescent lamp is radiating its energy over the affected area. This aids wonderfully in clearing up localized enlargements of the brests.

Fig. 385 shows a *T*-tube which can be cut into the tube from the water faucet attachment, and two or three patients can be treated at one time from the same water-faucet aspirating device.

Fig. 385 also shows a small, air, stop-cock which can be cut into each bel jar tube if so desired. In that way regulation can be made for each patient or each brest.

The quartz light should never be forgotten in the treatment of enlargements of the brest. The rays should be used locally over the glands, followd by the same treatment over the whole body. This not only produces a most profound local reaction, but enhances general metabolism.

When treating the brests for localized enlargements, always use extreme gentleness so as to not set up any irritation in the gland itself.

For the internal treatment, I recommend *iodin therapy*. This should never be overlookt. Also look wel to the dietetic and hygienic mesures. Keep the bowels wel open.

BREST, TUBERCULOSIS OF

Altho this is mentiond to some extent under the hed of tuberculosis it is wel to repeat it here.

Often tuberculosis of the brest is associated with tuberculosis of the lungs, but it is often located in the brest without symptoms of being located anywhere else.

Many times tuberculosis of the brest is associated with tuberculosis of the axillary lymfatic glands.

Sometimes the nipple is retracted the same as in cancer. There is very seldom any complaint of pain. Very seldom is the skin ulcerated or inflamed.

The treatment is the same as for tuberculosis in any other part of the body, but special attention must be given to the radiation of powerful radiant light energy—incandescent and quartz light combined—over the affected area. Soluble, stainless iodin anointed over the brest while giving the powerful radiant light treatment is also very beneficial.

BRONCO-NEUMONIA

(*See Neumonia*)

BRUISES AND HEMATOMATA

Bruises ar best treated by means of the quartz light. If you hav no quartz light, soak the bruisd portion in hot water for at least an hour, keeping the water hot all the time.

Powerful incandescent light therapy is of great value in bruises.

B *Hematomata* ar best treated by the quartz light and massage. The powerful incandescent lamp is beneficial, but nothing can compare with the quartz light (compression radiation if possible) in this condition.

BULIMIA

(*See Gastric Diseases*)

BUNIONS

(*See Callositas*)

BUST DEVELOPMENT

We ar often cald upon by our patients to rectify their bust development. Some hav one abnormally small and the other of normal size and it is no more than natural that they should want to hav them as symmetrical as possible.

The physician can do this very redily by using negativ pressure thru a sifon-air-exhausting apparatus or any other method of exhausting air, if a suitable bel jar is used.

The device I use in shown in Fig. 384. This Fig. also shows how it is attacht to a faucet.

Fig. 385 shows the style of bel jars I use and also the attachments that go with them.

For developing both busts at one time, a *Y*-shaped connector can be used and two bel jars used at one time, as shown in the illustration. Special features of the illustrated jars wer described when discussing mastitis.

Fig. 386 shows how the twin bust jars can be used along with the powerful radiant light for bust development.

Fig. 387 shows how the twin bust jars can be used while the patient is sitting.

Caution: Do not use too much force with this hyperemic treatment. Just enuf to bring about a good hyperemia to the brest is sufficient, and when so used can produce no harm. The same axiom is true of this work as with any other, that is *"Know the modality that you ar using, and use discretion in your work." Mild* massage or *mild* hyperemic treatment is far better than when the treatment is given in massiv doses.

Along with the hyperemic treatment for bust development I use stimulation over the 3d and 4th thoracic vertebrae, and never omit the powerful light over the chest.

For stimulation over the named vertebrae, the *pulsoidal current* can be used, having one electrode on one side of the vertebrae and the other on the other side. The slow-sinusoidal current can also be used in the same manner.

Concussion over these vertebrae can be used, being particular to have the stimulation on each side of the vertebrae rather than on the spinous process itself.

Another method of bust development is as follows:

Use the slow-sinusoidal current, or the pulsoidal current, one side being attacht to my special vaginal electrode placed in the vagina, and the other side to a bifurcated cord attacht to two clay electrodes, one placed over each brest.

If necessary, the nipples can be protected from the electrical current by means of rubber tissue or some other insulating material.

Make the alternations of this current four times the respiration and giv the treatment for 10 minutes each day. While giving this treatment, allow radiations from the powerful incandescent lamp to be directed over the chest.

CALLOSITAS C

Callosity is the name given to the hard and thickend patch of epidermis that forms on exposed parts by *intermittent* friction, or pressure. If we relieve both friction and pressure, Nature gets rid of the callus without any further aid.

Notis that *continuous* pressure results in atrofy or ulceration, but *intermittent* pressure is what produces callus. Also observ that a callus is usually rounded and slightly elevated.

The old-fashiond method of treating this callus was to scrape or sandpaper down the elevation. This is effectual to a certain extent—it wil make it grow.

Metatarsalgia or *Morton's Disease* is generally caused by a hevy callus forming on the ball of the foot.

When the callus occurs on the foot, we must find the cause and try to relieve it. One of the *best shoes* I hav seen for this purpose ar those sold under the name of *"Arch Preserver."* This shoe is the invention of Charles Henry Brown, who has given years of study to this condition. The secret of this shoe lies in the *flat* sole. Most shoes cause the bottom of the foot to assume a convex shape. Then, too, in

Cnearly all other shoes the arch support is not scientifically made, or placed.

The men's shoes ar manufactured by E. T. Wright & Co., Rockland, Massachusetts.

The women's shoes ar made by the Selby Shoe Co., Portsmouth, Ohio.

The youth's shoes ar made by the Excelsior Shoe Co., Portsmouth, Ohio.

The *Anatomik Shoe* is, no doubt, the most scientific, specialty shoe made. Dr. Cole's able article should be red by all those interested in "fitly fitting feet."

As an *arch bilder* or lifter, I think the *"Wizard" ap*pliance is the best.

Rubber heels I know ar very universally worn, but unless fiber or rubber soles ar worn also, the heel and sole seem to change shape, in an antagonistic fashion. I hav seen this demonstrated and hav observd the change in the worn part of the tred. Some say rubber heels of all kinds ar injurious to the feet and tend to weaken the arch. I am inclined to believe this is true. Surely the army examiners' reports show that something is radically wrong in feet or "feet fitting."

Treatment of calluses can be given cataforically, using sodium salicylate from the negativ pole, 5 to 10 milliampères for 10 minutes.

Another method, which is easier and may be as productiv of good, is to paint the callus, no matter where it is located, with the following solution:

Salicylic acid	10 gms.
Alcohol	10 mils
Sulfuric ether	10 mils
Flexible collodion U.S.P., q.s. to make	100 mils

Many times two grams of extract of cannabis indica is added to the abov, but I do not see how it is of any special benefit, unless it is for a very painful corn.

This preparation should be painted over and about one-quarter inch beyond the callus every night and morning and allowd to remain until it comes off. It wil generally begin to peel after three or four days, when the loose skin, or collodion, can be removed and the painting kept up for several days, until all the callus wil come off, leaving helthy skin

below it. *Paint the thickest portion three days sooner than the other part.*

Many times this solution painted over warts, corns, or bunions wil produce the desired result. It is wel in a case of corns or bunions to use a shield made from perforating a piece of felt or lintine.

These shields can be obtaind in boxes containing different sizes and shapes, but home-made ones ar just as good and cost much less. The object is to relieve the part from pressure while using the medicaments.

To remove collodion from the skin, use acetone and alcohol, equal parts.

CANCER—CARCINOMA

(*See Part One, Lecture XVI*)

CANCER OF STOMAC

(*See Gastric Diseases*)

CARBUNCULUS

Carbuncle is a serious condition and should be treated as such.

The modality that stands first and foremost for local as wel as general treatment is *actinic rays* from the quartz, mercury-vapor lamps—Quartz Light. The next best modality is radiations from the powerful incandescent lamp. The two lamps can be used together. Use the incandescent lamp over the carbuncle itself for from 10 to 20 minutes once or twice daily if possible, and giv the same modality over the entire body.

Over the lesion the Quartz Light should be used thru suitable quartz applicators. This can be done after the radiation from the incandescent lamp.

To righten metabolism I giv oxygen-vapor inhalations along with B-D-C therapy.

For the general toxemia that must be present with carbuncle, electric light baths along with every other method for enhancing elimination should be used.

Keep the bowels open.

Many physicians do not realize the seriousness of the infection that is concomitant with carbuncle. The sudden

Cdeths following the onset of carbuncle toxemia could hav been prevented had the physician realized that carbuncle is not a local disease. Do not giv antipyrin to reduce the fever that often accompanies carbuncle. The fever is easily controld by the powerful electric light or hot baths or hot packs.

Aid the skin in every way possible to enhance elimination. Hot epsom salt baths ar good for this condition. Blankets rung out of epsom salt water and used for a pack ar of much benefit.

Hot compresses of a saturated boracic acid solution ar very beneficial.

Soluble iodin, pure *carbenzol,* or a 5% to 10% solution of creolin in glycerin should be used locally. Just before applying the powerful light to a carbuncle, great benefit wil be obtaind by covering the lesion with soluble iodin.

There is no necessity for making injections of carbolic acid or any other substance into the carbuncle if the mesures given abov ar carried out.

The incision of a carbuncle, unless it is in a thretening location, should be avoided.

Never squeeze a carbuncle or boil. Use the Bier hyperemic method of emptying it, if that seems advizable. Squeezing a boil or carbuncle tends to open new areas for the pus.

Remember that the pus from a carbuncle is dangerous to an open wound and can produce serious conditions by inoculation. Quartz Light reduces this danger to a minimum.

Internal medicament seems to be indicated in carbuncle infection, but as the *patient* has to be treated rather than the disease, I cannot go into that. Calcidin is generally of great value, one grain given t.i.d. in hot water. *Calcium sulfid should always be given.*

Another method for treating boils and carbuncles is by means of a zinc needle attacht to the positiv pole, 5 to 30 milliampères given for 10 to 20 minutes may be used, according to the size of the lesion.

In leaving the subject, I might mention a fact that is often forgotten by a physician in making a local dressing for either a boil or carbuncle as wel as any other skin lesion. Cover the dressing with oild silk or gutta percha and over that place cotton and gauze. Keep all open wounds coverd so as to prevent outside infection.

CARUNCLE

Any small, fleshy eminence, whether normal or abnormal, is known by the name of caruncle or the Latin term *caruncula.*

The caruncles or *carunculae* that physicians ar especially interested in ar those about the urethra or vagina.

The urethral caruncle is the small red growth on the mucous membrane on the urinary meatus in women. This sometimes becomes very irritable and annoys the possessor very much.

The caruncles often seen about the orifis of the vagina ar supposed by many to be the remains of the hymen and ar tecnically known as the *carunculae hymenalis* or *carunculae myrtiformes.*

TREATMENT

Probably one of the best methods of eradicating these is by fulguration, but as that is quite painful unless a local anesthesia is given, I often snip them off with a pair of sharp curvd scissors. The best way to do this is to take hold of the caruncle with a pair of ruf-faced forceps and make stedy pressure until the patient does not feel it. Then quickly snip the part off. There is often quite a good deal of blood which can be checkt with a 25% solution of silver nitrate or a little 40% formaldehyde on a wooden applicator. Be careful to not injure any other part of the meatus.

Sometimes a caustic application on the sensitiv caruncles about the orifis of the vagina can be given by an application of tri-cloracetic acid ful, or half strength, but as a rule snipping them off with a pair of sharp scissors is the best plan.

The *quartz light,* if used thru a suitable applicator under pressure, wil often reliev this condition.

Some recommend the use of positiv galvanism, but it seems to be too painful for the average patient.

CATAR

(*See Nose and Throat*)

CATAR OF STOMAC

(*See Gastric Diseases*)

CEREBRO-SPINAL FEVER

This disease does not come under the hed of offis therapy. Where the symptoms come on slowly, radiant light energy is of the greatest benefit. Where the onset is sudden, the fysical therapeutist is hardly ever cald.

Do everything to increase the resistance of the body and favor defense.

Inasmuch as vaccine therapy seems to be the cause of many cases of cerebro-spinal fever, it behooves all physicians to look wel into this matter and see that the wave of vaccination therapy is stayd. Often if one has the least suspicion of cerebro-spinal fever setting in, powerful profylactic mesures, such as calcium sulfid used in massiv doses, and rapid elimination, ar preventivs.

CERVICAL LYMFATICS, TUBERCULOSIS OF

While this comes properly under the hed of tuberculosis, I want to mention it in particular.

While surgery is often used for this condition, I think we hav a modality that is infinitly better, which leaves no scarring, and which not only treats the local condition, but the patient's whole system. This method is *powerful radiant light energy*.

If one has a Kromayer lamp, use compression radiation thru a quartz filter over each gland or group of glands separately. Besides this, use the quartz light over the entire body along with radiations from the powerful incandescent lamp.

Giv iodin therapy.

Follow out all the hygienic mesures cald for in treating pulmonary tuberculosis. The method of quartz light and radiations from the incandescent lamp has no competitor in this condition.

(*See Tuberculosis*)

CERVICITIS AND EROSIONS

Erosions about the os uteri ar seen so often by offis specialists that it is really unusual to find a normal os. I think I can safely say that the majority of erosions ar not cured by the average physician. The reason is plain, namely,

the erosions ar secondary to cervicitis, as we seldom hav C
one of these conditions without the other; and they ar nearly always associated with an abnormal uterin position. Along with the proper replacing of the organ, *localized* treatment is advizable.

For these conditions I know of no remedial agency that can compare with cataforesis unless it is quartz light. Most of the concerns carrying electrical supplies for physicians can supply complete sets of electrodes for cataforic work.

For the cervicitis, I use a copper electrode attacht to the positiv terminal and insert it as far as the internal os. From 20 to 40 milliamperes of current can be used for from 5 to 7 minutes. I do *not* rotate or move the electrode while it is in situ. The current wil cause the mucous membrane to adhere to the copper. I first turn off the current and then withdraw the electrode. Along with it wil come an accumulation of mucus as wel as more or less mucous membrane. I then pack this denuded cervix with a cotton tampon saturated with *pure carbenzol* (Abbott), *iodex* or some other oily antiseptic. (This tampon is described and illustrated later.) Sometimes one, two or three treatments wil cure this annoying condition.

Treatments should be at least five days apart. On the intervening days I giv more general treatments, such as radiations from the 2,000-candle-power or 3,000-candle-power lamp over the abdomen, spinal manipulations in the sacral region, etc. I also instruct the patient to do *deep abdominal breathing* exercizes every night and morning. These breathing exercizes ar of the greatest importance if they ar carried out properly. (As this exercize is so important I wil repeat it here.)

While the patient is undrest and lying flat in bed or on the floor, they should take a deep breth so as to fil the lungs as ful as possible. Then press down on the diafram to lift the abdomen as far as they can. In order that they may see just how far their abdomen is elevated during these exercizes, I instruct them to put one hand on the abdomen and see how high they can elevate it. They should inahle while counting four, hold the breth while counting eight, and exhale while counting eight. The more slowly they can count and carry out the exercizes in the rythm given, the better. These exercizes should be repeated at least twenty times every night and morning.

C I also instruct them to do a squatting exercize so as to strengthen the thigh and abdominal muscles. Another exercize I hav found to be very good for this condition is to hav the patient take the nee-chest position and insert a rubber tube into the vagina while in that position. This allows the air to enter the vagina, thus permitting a forward movement of the uterus. The tube is withdrawn and the patient rests in that position for about 10 or 15 minutes.

Another beneficial exercize is to hav the patient walk about ten minutes night and morning on all fours, either naked or in pajamas. Nightgowns ar not suitable.

For erosions, one can use the cervical copper electrode on the positiv pole. Ten to 30 milliampères for from 5 to 7 minutes is the proper treatment, and should not be given more often than once in five days. As a rule no treatment is necessary for erosions as they wil automatically disappear when the cervicitis is cured.

If there ar old cicatrixes about the cervix, the proper way to treat them is to apply *thiosinamin* cataforically. This can be easily done thru a speculum, putting a little cotton ball at the end of an aluminum or block-tin electrode. The better plan is to use the electrode that is especially designd for this purpose. The solution of thiosinamin that I use is made up as follows:

Thiosinamin	5 gms
Glycerin	32 mils
Water	96 mils
Sodium Clorid	1 gram

Nascent iodin is also a very effectual remedy for an inflamed cervix or vagina. The way I make the nascent iodin is to spray or swab over the surface to be treated a 15% watery solution of potassium iodid. Then over that wet surface I pass ozone from an ozone generator under pressure. As soon as this ozone comes in contact with the potassium iodid, nascent iodin is formd. Its germicidal action is generally known.

Another method of treating the inflamed surface about the vagina and cervix is to place a quarter of comprest yeast cake into the cul-de-sac and pass into the vagina a small rubber tube with a syringe at the other end holding about 30 mils of hydrogen peroxid. The vulva is kept closed securely by means of cotton or cotton gauze while the hydro-

gen peroxid is injected and is "working" on the yeast. The gas that is generated opens up all the folds in the vagina, and the curativ effect of this procedure for all forms of vaginal inflammation is very markt. C

Tampon for Cervicitis

The tampon abov referd to is illustrated in Fig. 388. No. 1 shows a piece of braided silk about six inches long. This is tied into a knot as shown in No. 2. Then a piece of cotton is put in the hand, the knot is placed in this cotton, and a wooden applicator wet in antiseptic solution is twisted on, as shown in No. 3 and No. 4. No. 5 shows a special tube thru which the wooden applicator shown in No. 4 is

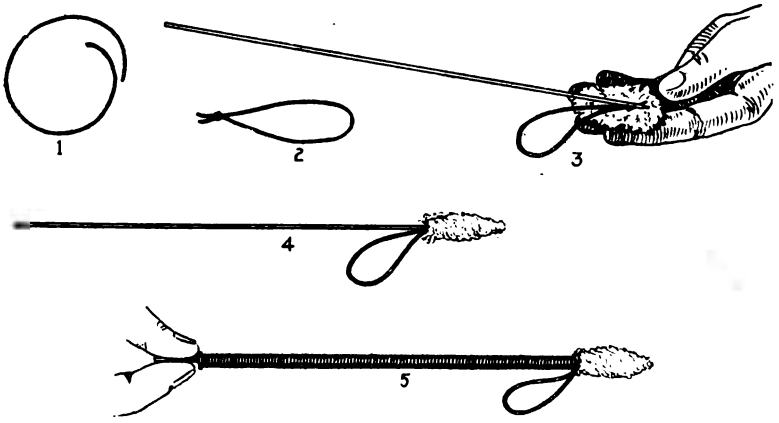


Fig. 388. Showing the various steps in making the Cervical Tampon devized by the writer. 1, represents six inches of braided silk. 2, the same tied into a loop. 3, placed on cotton to be rold. 4, rold on a wooden applicator. 5, propelling tube on applicator stick redy to force the tampon off the applicator stick, after the tampon has been inserted in the Cervix Uteri. The Spiral Tube 5, made by Knauth Bros., New York City.

past. This tampon, when arranged as in No. 5 is placed into the cervix uteri after first being wet with an oily antiseptic. By holding the tube and pulling out the applicator with the fingers as shown in No. 5, the tampon wil remain in the cervix for several hours before uterin contractions expel it.

If the patient livs at a distance from the offis, it is wel to hav a thred attacht to this silk loop so it can be puld out

C if much pain is caused in expelling it, but generally it wil remain in situ several hours and then be expeld naturally.

This form of tampon is of great servis when any medication is used in the vagina that should not reach the interior of the uterus. They can be made of any size, and it is wel to make up a quantity of various sizes and keep them in a receptacle with gauze at the bottom and formaldehyde solution sprinkled on the gauze. In that way the tampons ar always steril and redy for use.

I hav found this method of tamponing the cervix very useful for removing many reflex conditions and also for dilating the cervix if it is too much contracted, which is sometimes the case in spasmodic dysmenorrea.

Some cases of asthma can be entirely cured by tamponing the cervix in this manner every day for two or three weeks. It is wel known among most practitioners that the reflexes from the cervix uteri hav a very far-reaching effect upon a woman's whole organism.

Another treatment for *pelvic derangements* that I hav found very beneficial is that of spinal stimulation.

For *contracting the uterus*, stimulate the 2d lumbar vertebra.

For *dilating the uterus*, stimulate the 11th thoracic vertebra.

Clothing

See that your patient does not wear il-fitting or tight-fitting corsets. If possible, hav them wear no corsets but suspend the clothing from the shoulders.

If the abdomen is pendulous, they should wear an abdominal support.

Any clothing that constricts the abdomen should be avoided.

Clinical Case: Cervicitis

Case 276

Miss D. Age 28. Had severe pain over left ovary and lame back. I examind the uterus and found it large and retroverted, and a large *erosion* about os. I gave ful power of large lamp over the abdomen and heat and light per vaginam, and static-wave treatment per rectum daily for two weeks. I had her wear a pessary, along with carbenzol

tampon in the os, for one week. Erosion was all gone and all tenderness had disappeard from abdomen and back within two weeks. There has been no return of the trouble for the past eight years. C

(For such a case now I use quartz light per vaginam and powerful radiant light—incandescent and quartz—over the entire body. In place of the static-wave current, I use the slow-sinusoidal current or the pulsoidal current.)

CHICKENPOX (VARICELLA)

As chickenpox has to be treated at the bedside, it is difficult to prescribe powerful radiant light energy, but if it can be employd, the powerful incandescent light and the quartz light ar the best remedies known.

The next best method is to use eucalyptus baths. Put the patient in a bath tub fild with as hot water as the patient can bear, and in the water put about a quarter of a pint of oil of eucalyptus. Cover the bath tub up and let the pateint lie in this water for at least an hour. Then let the water off and steam the patient to make him swet profusely. Rub the body over with pure oil of eucalyptus. Put the patient to bed and keep him swetting. Keep the bowels wel opend and giv calcium sulfid (Abbott) ½ grain every hour.

Giv the patient plenty of water to drink and only liquid diet, preferably milk or Horlick's malted milk for a couple of days.

If these mesures ar carried out, there wil be no sequellæ involving the kidneys or eyes.

I would advize that the eyes be protected with dark glasses for about a week after patient is out—the same as in treating measls. (*See Measls.*)

CHILBLAIN (PERNIO)

This is a form of dermatitis which some say is caused by frostbite, but the fact that some people ar troubled with this, tho living always in a warm climate, seems to show that it is a *neurotic condition.* Many times this condition wil persist for years whenever there is a change in wether, and especially if the patient becomes overheated.

The most efficient remedy in my hands has been the *x-ray* from a soft tube, 20 inches away from the affected

C locality, and given for about 10 minutes, every other day for three or four treatments.

Another remedy which is doubtless superior to the x-ray, is the Quartz Light.

Another, which may be more available, is the use of soluble, stainless iodin (iodex) along with radiations from a 3,000-candle-power incandescent lamp.

High frequency currents used thru a surface, vacuum electrode to bring about a powerful hyperemia is also very helpful in treating chilblain.

Along with these mesures, use stimulation of the 6th and 7th cervical vertebræ which increases vagal tone and seems to hav a selectiv action toward remedying this condition, presumably by its action upon the periferal blood vessels.

Among the "simple" remedies that hav been used for years in treating chilblains is rubbing the affected area with a raw onion, cut and dipt in salt.

Another is to apply linseed oil for three or four nights in succession, allowing the oil to dry on the skin and wearing stockings to protect the bedding. On the night following the last application, soak the feet wel in hot water for at least an hour.

Some claim that both of these simple methods wil effectually cure chilblain, but hardly any two people can be treated alike for this condition.

CIRCUMCISION

Whenever consent can be obtaind, complete circumcision is always to be advized. For hygienic reasons alone, I advize all parents to hav their boy babies circumcized before they ar two weeks old. It prevents many troubles that nothing else wil.

Circumcision in females is indicated only when there is an adherent or redundant prepuce. It wil often make an invalid wel.

Zone Anesthesia can be effectually employd for doing many minor operations about the genitals.

Caution. Several cases hav been reported to me showing that any of the drugs used for local anesthesia can and often do permanently paralyze the sensitiv nervs about the gland of the penis or clitoris. This I believe is an *error in*

tecnic. If the subcutaneous injections ar made about midway between the glans penis and the abdomen rather than about the glans itself, I cannot lern of any permanent injury. In using subcutaneous anesthetizing injections about the clitoris, care should be taken to make the punctures wel away from the glans itself.

C

THE CLITORIS

One condition causing many neurotic conditions in young or old, is an adherent prepuce over the clitoris. The radical method of curing this is to giv an anesthetic, slit the membrane up and put in a few stitches on each side. Some object to this and it can many times be avoided by employing some other method, yet when needed, it should be done.

Novocain and adrenalin used cataforically over the clitoris wil so deden the sensation that a blunt dissector or probe can be used to loosen up adhesions between the clitoris and the hood. Sometimes a small, persistent adhesion can be snipt with a pair of scissors without any special inconvenience, and the bleeding is easily controld by a cotton pledget wet with some astringent antiseptic, or adrenalin.

In young children, avoid any form of treatment to the clitoris that calls for frictionary applications unless the clitoris be anesthetized first.

Mothers should be told of the importance of thoroly cleaning the space between the hood and the clitoris. Sometimes this is quite difficult to do, owing to an adherent prepuce, but if they ar taut to use cotton on an applicator stick, along with soap and water, they many times can prevent, or relieve nervous conditions, the cause of which is very obscure.

In some instances I use a Bier hyperemic cup about half an inch in diameter for drawing the clitoris out from under its hood. This should be used only on an adult, or after local anesthesia.

Zone anesthesia is fast becoming a popular method for obliterating the sensation about the genitals so that minor operations can redily be done with no feeling of pain whatsoever. Loosening up adhesions about the clitoris can be done on the majority of patients, without any other anesthetic. This is fully discust in the lecture on Zone Therapy.

CLOROSIS

(*See Anemia*)

COF

Find the predisposing cause and treat that. Zone Therapy is probably one of the best therapeutic agencies for cof.

COLDS

(*See Rinitis*)

COLERA

(*See Dysentery*)

COLLAPSE

Treatment depends upon what caused the collapse. If caused by hart affection, immediately stimulate the 6th and 7th thoracic vertebra. This can be done with the heel of the hand or a concussor. Hav the patient lie flat on the back or in a reclining position. Cold water thrown in the face is often a redy stimulant for collapse as wel as for fainting. Dilating the rectum is often very efficient.

CONJUNCTIVITIS

(*See Eye*)

CONSTIPATION

Constipation must be secondary to some derangement either in the secretory organism or musculature of the intestins. We must not forget that not only diet but constricting clothing, such as corsets, has a large part in the cause of constipation. Sedentary habits ar also conduciv to constipation.

To name all the ils that follow constipation would be to name nearly all the diseases known in medicin.

TREATMENT

I shal not giv any *medicinal means* for curing constipation as I do not believe any of them giv more than temporary relief.

Diet wil do a good deal toward curing constipation and therefore the diet must be carefully regulated.

I shal mention some of the *fysical mesures* which I hav found to be effectual in nearly all cases of constipation where there was no anatomical obstruction. In the majority of persons suffering from cronic constipation, a relaxation of the abdominal muscles wil be observd. This givs us a hint as to the procedure for not only strengthening the abdominal walls, but for relieving the stasis in the intestinal tract. C

I used to follow out a very complicated plan of giving electrical treatments for constipation, but little by little I hav been able to simplify the work.

The best *electrical treatment* that I hav found for constipation is the *pulsoidal current* passed thru either my *rectal dilator,* Fig. 227, or my *bi-polar rectal electrode,* Fig. 224, together with the wearing of an *abdominal support that supports* the abdomen.

When giving any of the electrical modalities that I shal mention, I invariably use radiations from the powerful incandescent lamp, as shown in Fig. 148.

The *uni-polar rectal electrode* that is referd to in the fysical mesures is shown in Fig. 227. It is made of solid aluminum. This electrode before it is inserted should be made as warm as the patient can bear it by letting hot water run over it. It should then be anointed with *iodex* or some other form of soluble iodin because I hav found that soluble iodin is very beneficial in all rectal treatments.

My *bi-polar rectal electrode* that is mentiond is illustrated in Fig. 224, the description of which is as follows:

A and *C* ar two metal parts between which is placed a rubber or fiber insulating material *B*. These three parts when put together make a round applicator which fits into the insulating handle, *D*. In the handle end of *A* and *C* ar holes into which ar placed standard cord tips. I pass the two battery cords thru the tube *D*, place the tips into the holes *A* and *C*, and then slide the ends *A,B,C* into the tubular insulating handle. When it is all together it is shown in *E* of this same figure. .

Tecnic

In using this electrode I lubricate it with *iodex* and placed the metal parts antero-posteriorly. In that way one pole of the current goes to the anterior part of the rectum which wil hav a beneficial action upon the uterus or prostate;

C and the other pole of the current wil come in contact with the posterior wall of the rectum where I especially wish to produce stimulation.

With this bi-polar rectal electrode I employ the pulsoidal *current,* mode *A,* or the *slow-sine current,* placing the electrode wel up into the rectum. This procedure wil do more toward curing constipation than any other one electrical modality that I know of. I giv these treatments every other day, making the current, if a slow-sinusoidal current, about 60 alternations to the minute and as strong as the patient can tolerate.

The benefits derived from the use of this electrode hav been more than satisfactory and I hav receivd good reports from all over the country from physicians who ar using it.

Another method is to use the *slow-sinusoidal current,* attaching one side to my *uni-polar rectal electrode* and the other to a clay pad on the abdomen, as shown in Fig. 148.

Another method is to use the *slow sinusoidal current,* attaching one cord to a clay pad or other suitable electrode over the 11*th and* 12*th thoracic and the* 1*st lumbar vertebrae* and the other over the abdomen. This treatment can be given every day or can be alternated with the rectal treatments abov outlined.

Another treatment is *stimulation of the* 11*th and* 12*th thoracic vertebrae* for two minutes and of the 2*d lumbar vertebra* for the same length of time. Some report curing constipation by this method without using any other modality.

The *slow static wave current* over the abdomen is also a very efficient remedy for constipation.

Another method is by means of an *oscillator* (Fig. 201) placing the belt over the abdomen and making the oscillations quite slowly.

Vibrating tables of various kinds ar proving very efficient in the treatment of constipation.

Galvanism can be used for the treatment of constipation by placing a clay electrode over the liver, to which is attacht one pole. The other pole is attacht to a hand sponge electrode, which is moved to follow the course of the colon. My plan is to attach the positiv side to the liver electrode for about 5 minutes and then reverse the pole and use the negativ to the liver for about 5 minutes.

Oxygen-vapor inhalation I use as an adjunct in treating all cases of constipation, as it rectifies faulty metabolism. By having the patient do *deep abdominal breathing* while taking the oxygen vapor, I am utilizing two very valuable modalities at one time. C

Hygienic mesures, including the drinking of plenty of water, one or two glasses on arising and one or two between each meal, wil materially aid any other fysical mesures. Some recommend oatmeal water and others lemon-juice and water. No doubt eating pineapple, or grapefruit, before or after brekfast, is very beneficial in many cases. Whole wheat bred, as wel as bran muffins, ar very efficient.

Regularity in going to stool is another very important adjunct that we must not forget.

Radiant Light alone wil cure many cases of constipation.

Many of my lady patients, who wer being treated for pelvic derangements, hav spoken of the improvement in their bowels. Some who made it a practis to take laxativs or enemas for years, hav reported that their bowels moved without artificial means soon after beginning treatments. Inasmuch as I had not yet paid any special attention to rectifying the constipation, I investigated the reason. I observd that the powerful light had been given over the abdomen for from 20 to 30 minutes while other forms of treatment wer given. (Even when using electrical treatments about the cervix or external genitals, I always let the light from the 3,000-candle-power lamp fall on the bare abdomen.)

Clinical Cases—Constipation

Case 278

Some time ago I had a lady patient, about fifty years old, who said her bowels had not moved without a laxativ or an enema for twenty years. This seemd a good chance to try out the use of the 3,000-candle-power lamp for relieving the constipation.

I do not believe in sacrificing the patient in any way to prove modalities, but in this instance it could make no particular difference for the first two or three weeks whether I used several modalities along with the light or not.

I did not prescribe any change of diet. I placed her on the table, under the lamp, with the light as near the abdo-

C men as she could stand the heat. I fastend the lamp in that position and let her stay there for one hour.

For the first two treatments I saw no change, but she reported feeling so much better in every way that she lookt forward to the twice-a-week treatment under the lamp. The evening that she took the third treatment, she said she felt as tho her bowels would move before she reacht home. Two or three days later she said her bowels moved very copiously the evening referd to, and they moved the following morning without any artificial means. I told her to take no cathartics unless she askt me about it. The next time she came, she made the same remark—that she felt as if her bowels would move before she reacht home. She later reported that her bowels moved that night and for three days in succession without any artificial means.

Four weeks of this treatment, along with deep abdominal breathing, oxygen-vapor inhalations and B-D-C therapy cured this patient of constipation. She has taken no cathartics or enemas for over two years.

Whether this same procedure wil be as successful in all cases, I do not know. It probably wil not be, as constipation is caused by so many different factors.

Case 279

Mrs. C. 55 years of age. Sent to me for examination and treatment. She complaind of a tired feeling all the time. Had persistent constipation and said for twenty-five years her bowels had not moved without a cathartic or an enema.

On examination I found she had enteroptosis and very relaxt abdominal muscles. I prescribed a saline laxativ to be taken erly the next morning, after which she was to come for treatment. I placed the clay electrode over the abdomen with a ten-pound sand pad over it (Fig. 148). The other electrode was my rectal dilating electrode (Fig. 227), which I placed in the rectum while the rapid-sine current was on. This electrode was lubricated with iodex. I used that as the patient complaind of some itching about the anus. I had no trouble in pushing this electrode into the rectum altho the sfincter was extremely tight. I made the rapid-sine wave as strong as she could endure it to relax the sfincterismus and allow the electrode to enter. After the electrode was in situ I gave the Pulsoidal Current, Mode A.

While giving this treatment I had the big light over her chest and as much of the abdomen as was not coverd by the sand pad. C

I gave this treatment daily along with oxygen vapor and B-D-C therapy. After the first six treatments she reported her bowels had moved that morning without any laxativ for the first time in 25 years. She continued to come for treatments three weeks longer and reported each day that her bowels moved in the morning before coming. It is now over a year since she stopt coming for treatment, and she reports that her bowels ar moving every morning without any artificial aid. Her general condition is so much improved that she and her husband both say that she has not been as wel before in twenty-five years.

As this same procedure has acted so wel in several cases, I believe it is a great aid in curing constipation. The powerful incandescent lamp is a logical remedy for constipation. It produces a surface hyperemia, thereby enhancing elimination thru the skin and reducing local blood pressure within. It also increases the action of the secretory glands and augments peristalsis. It not only acts locally, but enhances the elimination of CO_2 from the lungs and enlivens the circulation, and enables the hemoglobin to take up more oxygen. Oxygen-vapor inhalation and B-D-C therapy righten metabolism.

The Quartz Light I am finding to be a great aid in treating constipation. I use it in conjunction with the radiation from the powerful incandescent light.

Exercizes for Constipation

The exercizes to be prescribed for constipation ar identical with those mentiond for dysmenorrea. The object is to strengthen the abdominal musculature.

Abov all things, teach the patient *deep adominal breathing*. One rarely sees constipation in a person who has from childhood practist abdominal breathing.

After the cure for constipation is consumated, which may take place in from one week to six months, it may be necessary to giv an occasional treatment, if the old habit begins to return.

Insist upon the patient giving up cathartics and being *regular* about going to stool. The best time is erly in the morning soon after drinking a glass or two of cool water.

C The *position* taken by the person while at stool has a great deal to do with alleviation of constipation. The closer the thighs can come to the abdomen, in what is termd the *"Indian position,"* the better. Some individuals ar never constipated when they assume this position. Any person who is troubled in this way wil find relief by wearing a tight bandage about the abdomen while at stool. I hav sometimes found that putting the feet on a hassock, while on the toilet, is beneficial.

CONVULSIONS

Convulsions cannot be cald a disease. It is a symptom. Find out the cause and treat that.

COREA

With Corea can be clast *tics, habit spasms,* and *localized myospasms.* In all of these so-cald functional, nervous disorders, muscular training and psycotherapy, play an important part. Out-of-door living, suitable diet and regular habits of rest and sleep must be enforst. Enhance elimination.

In nearly all of these cases the urin shows a hyperacidity. Therefore the treatment must be similar to that for reumatism. When there is tachycardia, as there often is, the child must be kept as quiet as possible.

Endocarditis is often concomitant with tachycardia in coreic children and the prognosis in such cases is not very favorable altho with proper training the condition can be greatly improved.

There is no set rule for treating any of these cases. Each one is a law unto itself and a physician must use a great deal of thot and study in handling them.

Most *tics* and *habit spasms* can be cured by suggestion and training. This muscle training must be such as to bring the mind into use with every movement. Regulate the exercize according to the case.

Radiant light energy, the powerful incandescent light in conjunction with the quartz light—and electric light baths ar very beneficial.

CORNS

(See Callositas)

As a counterirritant, powerful radiant light and especially the *quartz light* is our very best fysical agency.

For an application to be used as a counterirritant, probably cloroform, camfor, and sweet oil, equal parts, is one of the best. The method of using this is to saturate a piece of muslin after it has been folded two or three times. Apply and cover with dry warm flannel. This wil blister in about three minutes and therefore must be carefully watcht.

CYSTITIS

To prove whether the epithelial lining of the bladder is abraded or not, inject into the bladder a sterilized solution of 5% to 10% potassium iodid in water. After twenty to thirty minutes, test the saliva with starch, to which has been added a little nitric acid. If it turns purple, it shows that the iodin has been taken up thru the bladder. This wil not occur if the inflammation in the bladder has not eroded the lining.

This is a good method to prove whether the cystitis is very severe or not, or is abov the bladder.

The therapeutic mesures that I hav found best for the treatment of Cystitis ar radiations from the powerful incandescent lamp over the abdomen for about forty minutes daily, followd with oxygen-vapor and B-D-C therapy for about 40 minutes. If one has the quartz light, use it with the incandescent light, following out the tecnic alredy given.

Some cases of cystitis ar helpt by using the long quartz pencil applicator in the bladder and radiating the quartz light thru it.

For a urinary antiseptic I hav found Hexamethyl. Comp., manufactured by the Abbott Laboratories of Chicago, to be as good as or better than Salol. I hav also found Sodoxylin, manufactured by the same company to be very efficient if the acidity of the urin is very high.

Hot compresses made from boric acid solution ar very beneficial for home treatment.

Never neglect to giv stimulation of the 12th thoracic and 5th lumbar vertebræ in all cases of cystitis.

Clinical Case—Cystitis

Case 280

Mrs. D. 48 years of age was referd to me for diagnosis and treatment by her seventh physician within one year. Her

C case had been diagnosed as incipient tuberculosis and then as tuberculosis of the bladder. As she continued to grow worse under treatment, she continued to change doctors or the doctors sent her to someone else.

Before asking her any questions, I examind her by the Bio-Dynamo-Chromatic method. Her normal MM VR was absent and no screen would elicit the MM VR except *D*. Therefore I knew she was suffering from some toxemia caused by the gonococci.

Upon obtaining her history I found that her husband had had gonorrea, but she supposed he had been cured of it. She gave a history of having to urinate every one or two hours during the day and night, and of having severe pains thru the bladder and vagina with a continual burning feeling thru the vagina, urethra, and external genitals.

Upon examining the urin I found the quantity very scanty and loaded with pus and red blood corpuscles as wel as bladder epithelia of the various layers, showing there was a very intense inflammatory condition present. Gonococci wer very numerous in the secretions from the urethra.

This lady had been using very strong lysol solutions as wel as biclorid of mercury solutions in the vagina, which had brot about a severe inflammation in those parts. I told her to use no more washes except what I gave her—chinosol to be used in a normal salt solution, one 15-grain tablet to the pint with a little menthol and thymol added.

I gave her Abbott's hexamethyl. compound, one tablet in half a pint of water, to be repeated three times daily for several days.

I began treatment by means of the 3,000-candle-power lamp over her abdomen and genitals, this lamp being focust so the heat was as much as she could stand. I gave this for 40 minutes at a séance. This was followd by oxygen-vapor inhalation and B-D-C therapy for 40 minutes. These treatments, along with stimulation of 5th lumbar and 12th thoracic, wer given daily for six weeks.

After the first week of treatment she could sleep all night without arising once to urinate. All pain thru her pelvic region, including the bladder, had disappeard. The inflammation in the genitals had subsided. At the end of four weeks she was practically wel. After six weeks of treatment I considerd her wel and she said she was wel.

Irritable Bladder

I hav many patients who complain of *irritable bladder,* and the principal symptoms is a desire to urinate often, especially in the night.

For this condition nothing can compare with the 3,000-candle-power lamp applied over the pelvis and perineum for half an hour daily.

For internal medication, if it is required, I hav found Sodoxylin, Arbutin, or Hexamethyl. Comp. manufactured by the Abbott Laboratories of Chicago, to be very beneficial.

Along with the radiant light treatment, stimulation of the 12th thoracic and 5th lumbar vertebræ givs very good results.

Advize your patient to not drink anything after five o'clock in the afternoon, but drink all they can of pure water up to that time.

To prevent *residual urin* in a prolapst bladder, hav patient urinate while standing on hands and feet—"on all fours." This position is often a "cure" for irritable bladder. (*See Enuresis.*)

DIABETES MELLITUS

D

Up to the present writing I hav not discoverd a chromatic screen for magnifying the VR of a person afflicted with diabetes mellitus.

The fact is that a person with no other concomitant complaint, givs a normal MM VR. In several patients having glycosuria I hav been able to get more energy from the pancreas than normal. This, however, is no diagnostic sign.

If there is a ruby MM VR (*A*-MM VR), immediately institute the treatment as outlined for tuberculosis, at the same time treating the patient for glycosuria. The ruby MM VR, along with glycosuria, shows that the patient has diabetes mellitus and tuberculosis.

I mention this disease in particular because of the many cases which ar afterward afflicted with tuberculosis. Some observers claim that over 40% of all cases of diabetes mellitus sooner or later become tuberculous. It is for this reason that it is wel to examin all diabetic patients quite often, to see whether you obtain a normal MM VR or not.

By the wel-known hygienic mesures, diabetes mellitus can be greatly benefited.

D In treating diabetes mellitus, never forget to employ stimulation of the 6th and 7th cervical vertebræ. I hav many reports showing that this procedure has, within six weeks, cleard up all the sugar reactions, without using any other remedial agencies, not even changing the diet.

For stimulation of the vertebræ, probably the pulsoidal current either to the 6th and 7th cervical vertebræ alone, or with one pole thru the eyes as previously described is the best plan. In lieu of the pulsoidal current, the slow-sine current can be used, placing one terminal over the vertebræ named and the other over the sacrum or other convenient location. Concussion can also be employd. After the vertebral stimulation I giv oxygen-vapor inhalation along with B-D-C therapy for about 40 minutes daily. We should institute mesures to facilitate elimination and at the same time cut down the hydrocarbonates in the diet.

I find that by following out the prescribed method of treatment the patient can tolerate a fairly normal diet. Drinking plenty of fresh water, preferably distild water, or, better, distild water that has been exposed to the sunlight in an amber bottle for at least eight hours, I hav found to be very beneficial in treating this disease.

I hav found that giving radiations from the 3,000-candle-power lamp over the pancreatic region for from 10 to 20 minutes at least once a week is also very beneficial.

Aid elimination in every way you can.

Test the urin at least once every month. Use a specimen from a twenty-four-hour specimen only.

Remember that sugar in the urin does not necessarily indicate diabetes mellitus. There must be other symptoms such as increast appetite, increast thirst, and an increast amount of urin past daily.

During the past year I hav been using the quartz light in connection with the powerful incandescent light daily and follow this with the magnetic-wave current in all cases of diabetes mellitus. I consider these modalities of great benefit.

DIFTHERIA

This condition does not, as a rule, come under the hed of offis practis, yet it is wel to mention just what can be done with powerful radiant light energy.

The quartz light used in the throat thru an appropriate applicator is of great value. Some say it is specific.

Powerful incandescent light energy combined with quartz light over the throat and entire body is of paramount value. D

Iodin therapy and calcium sulfid ar indicated in diftheria. Never forget Homeopathic therapy.

With proper diet and fysical mesures as abov outlined, many cases of diftheria ar carried thru without any untoward sequellæ.

Serum treatment is *supposed* to be the proper treatment for diftheria, but I am not convinst that it is of any special value if other mesures ar properly enforst. I hav seen too many die soon after the use of the antitoxin treatment to make me hav as much faith in it as some hav.

Anything that causes a reaction seems to be beneficial in diftheria, and where a reaction has been brot about by some other agency than antitoxin, just as beneficial results hav been reported as by the use of antitoxin.

Elimination by means of radiant light energy and the quartz light as abov outlined I believe wil do more toward curing diftheria than any other mesure, altho it is difficult to carry out these mesures in the average diftheretic case. Nevertheless it could be done if municipalities wer as enthusiastic over fysical mesures as they ar over serum and vaccine therapy.

The keynote in treating diftheria is to treat it when it begins. If fysical mesures, as abov outlined, wer then instituted, there would be no need of the hazardous intubation operations.

DILATION OF STOMAC

(*See Gastric Diseases*)

DRUG POISONING

(*See Poisoning by Drugs*)

DYSENTERY

First clear out the bowels by means of castor oil. The castor oil sold under the trademark name of "*Laxol*" I hav found very efficient and very palatable.

Do not check dysentery by means of opium.

After the bowels ar wel cleard out, the sulfocarbolate of zinc (Abbott) seems to be very beneficial. In many cases emetin in some form is indicated. The form of ipecac sold

D under the trade name of *"Alcresta"* (Lilly) can be recommended.

Iodin therapy is indicated.

Powerful radiant light energy over the abdominal region is always of great benefit.

The *diet* should be very light and consist mostly of boild milk and rice water. If one can get good Kumiss, that is to be recommended. So also is acid cultured milk.

Do not giv raw sweet milk to a person suffering with dysentery.

Be careful to not starve the patient in trying to protect the intestins. No rule can be laid down for the diet in the treatment of dysentery as a class. The patient must be taken into consideration.

DYSMENORREA

Perhaps there is no complaint to which woman is heir that can be relievd and cured more fully by fysical means than painful menstruation. Medicins of all kinds hav been prescribed and the results hav been disappointing. Curettage is a procedure that does not seem rational, yet it is done constantly, tho very few cases hav been much benefited by it.

If *retro- or anti-version or flexion* is present, that must be corrected. Electricity givs us more hope for relieving uterin malpositions than any other non-surgical procedure. Sometimes as a *last resort* a surgical operation has to be advized, but such operations ar fraut with great danger, because of the reflex conditions that often result *long after* the operation is done. Surgical interference should be advized only after all other mesures hav proved futil.

For *retroversion* without adhesions, I employ the slow sinusoidal current or the pulsoidal current thru my special uterin elevator and electrode. One can use copper, aluminum, nickel, or pure silver. In fact any of the metals that wil conduct electricity ar suitable for the sinusoidal currents.

Should one wish to use galvanism, the electrode devized by Dr. Neiswanger and illustrated in Fig. 231 is to be recommended. This is a hollow, perforated, copper ball, around which cotton gauze and perforated goldbeater's skin should be tied. I use such an electrode in cases where I wish to use copper cataforically.

From 20 to 60 milliamperes of current can be used for from 3 to 8 minutes every other day. D

Of course when using this electrode, it should be attacht to the positiv side while the indifferent or negativ pad is the clay abdominal electrode previously described.

If one is using the slow-sinusoidal current, set the controller so the changes of direction of the current ar about 30 to 60 a minute. This givs the muscles a chance to contract slowly and relax.

The sinusoidal treatment I giv for about 10 minutes. At the same time I giv radiations from the powerful incandescent lamp, these radiations to continue also for 10 minutes after the electric current is discontinued. Then I giv 10 to 20 minutes of radiant light energy over the lumbar region.

Insted of using the slow-sine wave during the whole treatment, 5 minutes can be used for that, 2 minutes for the superimposed wave, and 3 minutes for the surging sinusoidal. This procedure has a better effect upon the muscles than one stedy form of current during the whole treatment. This treatment tends to strengthen and contract the muscular ligaments holding the organ. At the same time it contracts the uterus and promotes normal secretions and excretions, thus relieving stasis, which is the primary cause of dysmenorrea.

Between treatments it is wel to hav the patient wear some wel fitting pessary or tampons, as that hastens the effects of the treatment. If the patient is suffering from constipation, as she generally is, that can be treated on the alternate days or on the same day.

When there ar *adhesions* with retroversion, I find negativ galvanism thru my uterin elevator and vaginal electrode is very useful.

The negativ current can also be used thru the copper electrode abov described. It is the relaxing effect of the negativ current that we ar seeking.

When giving this negativ galvanism for adhesions with retroversion or retroflexion, I exert upward pressure by means of this uterin elevator and vaginal electrode, holding one hand under the elevator near the vulva and pressing downward at the end of an extension handle. This extension handle can be the regular universal wooden handle used on any of these electrodes. By having one hand act as a fulcrum and the other as the weight of the lever, intermit-

D tent and quite hevy pressure can be brot upon the uterus toward lifting it up. At the same time the negativ galvanism is passing thru the electrode.

I hav had some very good results from this method of treatment and hav often relievd uterin pressure against the rectum in this manner.

Always instruct the patient to practis the nee-chest position, following out the tecnic given for retroversion or retroflexion.

Antiversion or *antiflexion* I treat in the same manner only I exert the pressure on the anterior surface of the uterus insted of the posterior.

For *antiversion* or *retroversion* I many times use interrupted negativ current for 3 minutes, employing from 20 to 30 milliamperes and making from 30 to 60 interruptions a minute. Sometimes I use the superimposed sine wave current for about 3 minutes after having used negativ galvanism for 7 minutes.

In all *uterin treatments* use the powerful incandescent lamp over the abdomen and lumbar and sacral regions. If possible giv from 10 to 20 minutes of radiant light treatment to the abdomen and at least 10 minutes to the lumbar region.

Augment this incandescent-light therapy with the quartz-light therapy, if possible.

If you hav a static machine, the slow static-wave current can be used with the same metal electrode as is used for the sine wave, making the seance 20 minutes. I think, however, that the sinusoidal current is far superior to the static wave, as the contractions can be more accurately gaged and the effect on the musculature is surely better with the sinusoidal currents than with the static. I hav carefully tested this out and hav surely had cases enuf from which to form my conclusion.

Concussion or some other *spinal stimulation* is also indicated in pelvic treatments.

The *electric light bath* is also of great servis in dysmenorrea or amenorrea.

Deep breathing wil cure many cases of dysmenorrea. *Never overlook this most important exercize.*

Zone Therapy is becoming a popular accessory in the treatment of dysmenorrea. This is fully explaind in the lecture dealing with Zone Therapy.

Case 281

Some time ago I was hastily cald to see a lady in a near-by apartment. I found her in a frenzy and apparently she did not know anything she was doing. From the landlady I lernd that she had begun to flow, but for some reason had suddenly stopt. The same thing had happend before, but never to throw her into such violent hysteria. I quickly turnd the patient over on her abdomen and sunk the aluminum capt fingers of my right hand into her lumbar region over the 2d vertebra. I held them there while exhibiting rays from a 100-candle-power lamp over that region. In about 3 minutes the patient's form began to relax and she was quiet. I then turnd her on her back and exhibited the lamp over the abdomen for 5 minutes, making the skin very red, but taking care not to blister it. By this time she was perfectly quiet. I then put the lamp over her face and neck and told her to go to sleep. I lernd afterward that the patient slept several hours, her flow began in good shape and she had no more trouble. This was a case of spasm and I exhausted the spasm. Rapid-sinusoidal current would hav been beneficial for such a case—one terminal on abdomen and the other over 2d lumbar for 5 minutes to exhaust the spasm. Stimulation of the 11th thoracic vertebra was also indicated.

DYSPEPSIA

First test the urin and then regulate the diet accordingly. Experiment with each patient *individually* to see just what foods agree and what disagree. Do not go by any set rule. No two persons can be handled alike when treating indigestion any more than when treating any other condition. Some foods which apparently should be prohibited can be used with impunity by some individuals. Cut out all fried foods, pastries and sugar, as wel as tea, coffee, and chocolate.

The best fyscial mesure is powerful radiant light energy over the stomac area as wel as over the back. For this use the powerful incandescent light and the quartz light combined.

For the pyrosis (hart burn) that is often concomitant with dyspepsia, milk of magnesia (Phillips) is nearly always indicated.

Globus Hystericus is usually caused by dyspepsia, altho sometimes it is entirely of a neurotic origin. Follow out the treatment as outlined abov and especially use *suggestiv therapy.*

(*See Gastric Diseases.*) (*See Stomac, Diseases of.*)

E EAR, NOSE AND THROAT

These diseases too often fall into the hands of those who make a specialty of surgically operating on the nose, throat and ear. You can many times benefit your patient more by keeping him away from the nife than in any other way. In most cases surgically operated on for minor complaints of ear, nose and throat, I hav found that the second condition was worse than the first.

The promiscuous and unconditional removal of the tonsils or turbinated bones, seems to have reacht its zenith. The public ar waking up and ar revolting. We ar entering into a *non-surgical era.* People ar beginning to abhor the sight or sound of a nife, and the sooner the progressiv physician realizes this, the better it wil be for him and his clientele. It is an easy matter to enucleate a tonsil or cut off a turbinated bone, but it is not so easy to remedy the damage done. I find that many of the abnormal nose and throat conditions can be remedied by local applications or the use of remedies cataforically applied.

The time was when every aking tooth was puld. Dentistry has progrest and teeth ar treated and saved. Practicians ar now *treating* the ear, nose and throat more than formerly, and this shows *progress.*

Regarding diseasd crypts in the tonsils, if necessary open them and treat them, but why enucleate the whole gland because a small part of it has an inflamed area? One might as wel amputate a hand because a finger is at fault. For diseasd crypts in the tonsils, I do not know of any procedure, except the quartz-light radiation, that can equal opening the crypt with a suitable nife and painting it over with a 25% solution of silver nitrate, after it has been thoroly cleand with alcohol locally applied.

For almost all diseases of the throat and mouth, as wel as the antra, radiations from the 3,000-candle-power lamp ar very efficient.

For inflamed tonsils when one has not the powerful incandescent lamp, it is said that irrigation of the fauces with

water as hot as the patient can bear wil work like magic. The tecnic is as follows: Let the patient hold the hed over a sink or some receptacle and from an ordinary syringe bag, let the water run into the mouth and out. The hed should be held so the liquid wil come in contact with the tonsils and fauces. (As some patients ar particular in regard to the use of the tube in the syringe bag, the tube can be reverst, or a plain, glass tube terminal can be used.)

Actinic rays from the quartz, mercury-vapor lamp (quartz light) bid fair to revolutionize the treatment of nose and throat conditions.

The special quartz rod applicators shown in Fig. 184 ar especially made for treating hypertrofy of the mucous membrane in the nose.

Another quartz applicator shown in Fig. 185 is especially made for treating conditions in the throat such as enlarged tonsils, tonsilitis, acute suppurativ tonsilitis, laryngeal tonsilitis, and kindred conditions about the fauces.

With these quartz applicators the powerful actinic rays ar brot in direct contact with the area to be treated. The reaction is almost immediate and the resolution takes place with greater rapidity than from any other therapeutic agency that I hav ever used or herd of.

Quinsy sore throat, as it is commonly cald, probably can be more easily and thoroly cured by means of soluble, stainless iodin and the 3,000-candle-power incandescent lamp than by any other method, except the quartz light.

I hav used high frequency surface electrodes for this trouble, as wel as fulguration, and both ar good; but more can be done with soluble iodin and powerful light and heat than with all the other methods combined.

Zone therapy seems to be especially applicable for all diseases of ear, nose and throat.

An old practitioner has recently given me the following formula, which he uses as a swab for sore throat. As he has an extensiv country practis I giv it to you for what it is worth, tho I know "swabs" ar not employd as much as they wer formerly:

Zinc iodid	16 gms
Iodin crystals	15 gms
Glycerin	64 mils
Aqua dist.	64 mils

M sig. Swab throat every morning.

For painful or obstructed deglutition, stimulation of the 2d and 3d or 6th and 7th cervical vertebrae is in many instances curativ. Zone therapy is of great benefit for this condition.

If an operation has to be done upon the nose to enable one to breathe, the *sub-mucous* operation should be performd, as the mucous surface is needed.

In regard to the *ear,* most of the conditions can be cured without operation. See that the ear is wel cleand out and if the Eustachian tube is inflamed, do not immediately insert a catheter, as this is irritating to the membrane. Use the modified Politzer method which is the use of hot, medicated vapors under pressure during the act of swallowing. This is easily accomplisht by using the DeVilbiss double nasal tip (Fig. 395) and a comprest air nebulizer. I hav seen cronic conditions, that wer made worse by the use of the eustachian catheter, that wer made very comfortable by following out this method.

Vibration over the ear, nose and throat, if properly carried out, is very beneficial in any of these conditions, but probably the most benefit can be derived from the 3,000-candle-power lamp applied over the hed and face. Along with this I always giv oxygen-vapor inhalation and B-D-C therapy.

With a double-ear electrode, the sinusoidal, pulsoidal, or interrupted galvanic current can be employd.

In many conditions of a sclerotic nature in the ears, I use the slow sinusoidal current, or the pulsoidal current, having the double-ear electrode over the ears for one terminal, and the other terminal a sponge or clay electrode over the 2d and 3d or 6th and 7th cervical vertebrae.

An efficient remedy for *earake* in either a child or an adult is a mixture of three drops of carbolic acid (fenol) to one teaspoonful of glycerin. Mix wel and drop into the ear two or three drops.

Do not put oil into an aking ear. Glycerin, being hygroscopic, very quickly takes up water thru the ear drum, thereby lessening the pressure in the middle ear. Oil acts just the opposit. That is why so many "ear drops" with oil as a vehicle ar not efficient.

For *Mastoiditis* the compression radiation from the quartz, mercury-vapor lamp is probably the *very best* pro-

cedure. Nearly all surgical operations about the mastoid can be prevented by the quartz light correctly used. E

For *mastoid pains* I hav found the quartz light to be very beneficial, especially when used with the 3,000-candle-power incandescent lamp.

If none of you hav had the opportunity to use the powerful light over your own face and hed when suffering from acute rinitis, you hav no idea just what relaxation means. Try it.

Defness Treated By Sound Waves and Other Modalities

For several years I hav been working out a method for treating certain forms of defness by means of sound waves. So far my work has proved very satisfactory to the patient and the physician.

My method is to use a Galton whistle (Fig. 77), or some other device for giving a definit sound vibration. I seat the patient at a certain distance from the whistle, or other device, and instruct him to raise his hand as soon as he does not hear the sound after I hav begun to sound the instrument.

I begin with a sound that he redily hears and then gradually lower the tone until he cannot hear it. In this way the patient exercizes his wil power and at the same time his hearing mecanism. I make a record on a card, so as to know just how much the patient improves from one treatment to another. As he is seated to hav his back to the operator, his eyes can play no part in the work. Your assistant can do this work as wel as you can, and that aids materially in the practicability of the method.

I repeat the exercizes several times at each treatment and giv the treatments as often as possible. In many of these cases I hav observd that the patient can hear more acutely if he has had radiations from the 3,000-candle-power lamp over his hed and face for a few minutes previous to the tests. I think the light and heat stimulation aid materially in enhancing the recovery.

You wil also notis that the patient wil hear a lower pitch, or a higher pitch farther distant, if he is grounded and faces either north or south, provided he has a normal MM VR.

E The pulsoidal current, with some cases, aids very much in restoring hearing, applying the electrodes over the ears.

In many forms of defness, especially where the eustachian tube is at fault, I hav found that oxygen-vapor inhalation along with B-D-C therapy greatly aids any other method.

The modified Politzer method has been mentiond.

For *tinnitus aurium* there is probably no agency yet discoverd that has the magical effect that *Zone therapy* has. Many cases of *otosclerosis*, in which the patient has not herd for years and has been annoyd by all sorts of ringing sounds in the ears, hav been not only relievd but cured by this simple method.

Hygiene of the Nose and Throat

The nose creates its own climate and is sympathetically affected, not only by the respiratory system, but also thru other organs.

In *asthma* the irritation of some special focus in the nose wil produce an attack. In *hay fever*, the starting point seems to be in the mucous membrane of the nose. The majority of *conjunctival infections* seem to be thru the mucous membrane of the nose. Diseases of the *lacrymal sac* seem to hav a like origin.

The mucous membrane of the nose is of great assistance in diagnosis. Many of the deformities of the nose, nasofarynx, farynx, and face ar caused by nasal obstructions.

Cronic rinitis is often the etiological factor in producing disease of the air sinuses, farynx, larynx, bronchi, trachea, eustachian tubes, etc.

Many forms of *hedake* ar caused by an obstructed nose.

The classical experiment of Von Lenhardt shows that the lymfatics from the nasal mucosa go directly to the tonsils. This shows why the *tonsils should be saved* as wel as the mucosa of the nose, whenever possible.

A properly constructed atomer and nebulizer ar as important in caring for the nose and throat as a tooth brush is in caring for the teeth.

I think the DeVilbiss Manufacturing Co., Toledo, Ohio, make the best atomizers (atomers) and nebulizers to be had for professional or home use.

The following illustrations show the atomers that I use—all made by DeVilbiss Manufacturing Co. of Toledo, Ohio.

Fig. 389 shows their No. 52, which sprays any liquid, oily or aqueous, in any direction desired.

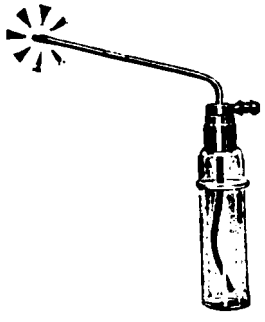


Fig. 389. Showing Atomer, No. 52, DeVilbiss Mfg. Co.

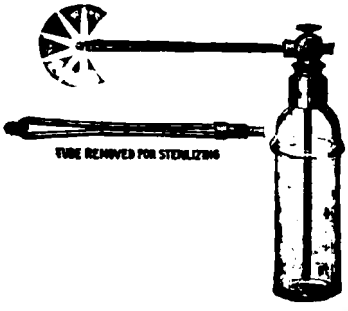


Fig. 390. Showing Atomer, No. 51, DeVilbiss Mfg. Co.

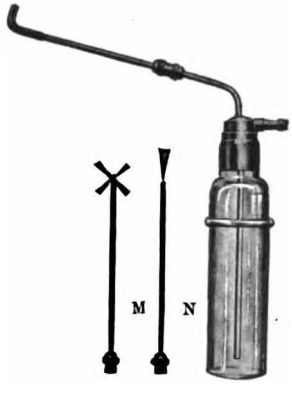


Fig. 391. Showing Atomer, No. 56, DeVilbiss Mfg. Co.

Fig. 392. Showing Nebulizer, No. 80, DeVilbiss Mfg. Co.

Fig. 390 shows their No. 51, which seems to hav an advantage over the others as the spraying tube can be redily removed and additional spray tubes can be used. This eliminates the necessity of stopping to sterilize between treatments, and also makes it possible to hav an individual spraying tube for each patient.

E Fig. 391 shows their No. 56. The advantage of this is that it is equipt with post-nasal tips, M and N, and has a lock-nut union for interchangeable tips.

Fig. 392 shows their nebulizer No. 80. This nebulizer I hav found to be the best of anything of the kind on the market. The metal table inside of the bottle is made adjustable so as to regulate the vapor, that is, make it coarse or fine.

Fig. 393. This Heater is made of one piece of drawn brass, highly polisht and nickel plated. The top can be removed for adjusting the electric bulb. The bulb is of four-candle-power which wil keep the solutions at from 150 to 160 degrees Fahrenheit.

The Heater can rest on a table or shelf, or on a wall bracket, which they can supply.

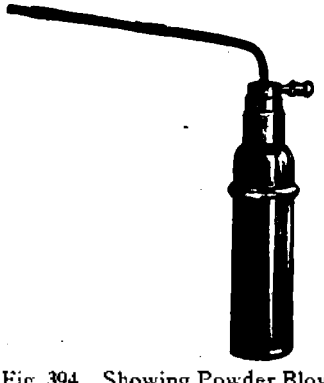


Fig. 394. Showing Powder Blower, No. 73, DeVilbiss Mfg. Co.

Fig. 395. Showing Double Nasal Tip, No. 526. It can be attacht to any DeVilbiss Nebulizer

When using atomers or nebulizers, I always keep them warm in one of the DeVilbiss Physician's Closed Heaters, shown in Fig. 393. This heater is made of one piece of drawn brass, highly polisht and nickel plated. A four-

candle-power carbon lamp is in this heater, which keeps the bottles warm. E

Never use cold solutions in the nose and throat.

Fig. 394 shows their No. 73 powder blower for nose and throat. Altho I do not use powder in the nose and throat as much as I formerly did, yet some do and think it is a good method of treatment. For those, I recommend this style blower.

Fig. 395 shows the DeVilbiss No. 526 *Double-Nasal Tip*. This is the nasal tip that I use for the *modified Politzer method* for treating diseases of the middle ear. I keep many of these double-nasal tips in a sterilizer always redy to use. The tips ar on flexible tubes so they can be brot nearer together or farther apart, according to the shape of the nose.

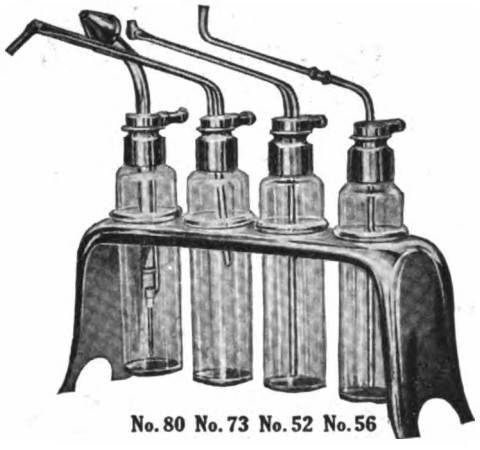


Fig. 396. Physician's Four Hole Rack No. 529.

Fig. 396 shows the DeVilbiss Physicians' Four-Hole Rack No. 529. This is very convenient for keeping surplus bottles of liquids in.

The DeVilbiss Mfg. Co. also make a ful line of hand atomers and nebulizers for home use. Many of these I carry in stock to furnish my patients. Fig. 397 shows No. 16, the one I like best of all.

The *hand bulb* made exclusivly by the DeVilbiss people with the metal connection is shown in Fig. 398. This is without doubt the most complete hand-bulb arrangement made.

E TRANSILLUMINATION

A quick method of ascertaining whether there is an inflamed condition in the frontal sinuses, within the bones about the orbit, or in the antra, is by transillumination.

For this a flashlight can be used by putting a piece of rubber tubing over it and passing it wel up into the nasal-orbital angle. If there is no inflammation, the red transillumination wil show very clearly. By experimenting on a

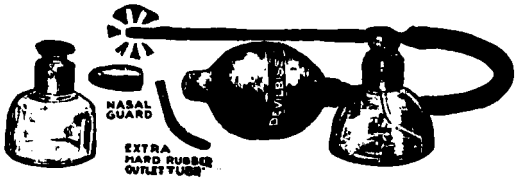


Fig. 397. DeVilbiss Atomer No. 16.

It sprays nose and throat.

It sprays any liquid; oily or aqueous.

It sprays in any direction.

It sprays from any bottle or open container.

It has two bottles; one for clensing solution, one for oil.

It has no corks nor washers.

It has no fine fluid tube to stop up.

It has a metal nasal gard which can be used, if desired, when spraying the nose.

It has an extra outlet tube of hard rubber for use when spraying strong corrosiv solutions. When this tube is used the solution lies in contact with glass and rubber only.

It is metal, therefore durable.

It can be sterilized by boiling the metal part or passing it thru a flame.

It can be used as a nasal douche, or for clensing purposes, by placing the finger over the hole in the cap on the bottle and compressing the bulb.

To make extemporaneous mixtures, cover the hole in the point with the finger and compress the bulb. This forces the air into the solution and agitates it.

It can be used with either hand bulb or comprest air.

The DeVilbiss OBLO bulb is made of highest grade, special stock, molded in one piece, and has a hard metal ball valv.

This Atomer complete is *absolutely garanteed*. Should bulb or metal part prove defectiv, return to The DeVilbiss Mfg. Co., Toledo, Ohio, Windsor, Can., or 71 Newman St., London, W., Eng.—with name and address in package—for repair free of charge.

Three Ways to Clean this Atomer

First—Cover the hole in the point with the finger and compress the bulb. This forces the air current thru the fluid tube.

Second—Hold thum over the hole in the cap on the bottle and compress the bulb. This throws a hevy spray and washes out the instrument.

Third—Spred the two tubes apart at the end with a nife blade, remove spray point and after cleaning out the fine hole on each side of the point replace it with the word "up" facing upward.

helthy individual, one wil be able to differentiate the normal and abnormal condition in these sinuses. E

For examining the antra of Highmore, put the tube into the mouth and hav the patient close the mouth tightly about it.

Compare the two sides.

This examination has to be done in a dark room. There ar special lamps manufactured for this purpose, but an ordinary flashlight wil do with the right kind of rubber tubing attacht.

The transilluminators carrying a lamp attacht to the electric lighting system ar unhandy and create too much heat. However they can be used. One of the best and most simple devices for this purpose is the *"Reeder Transilluminator"* shown in Fig. 399.

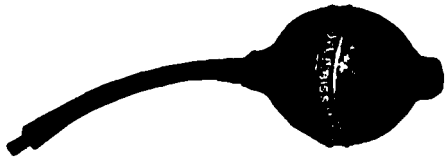


Fig. 398. No. 0, Physician's OBLO Bulb with metal connection for any DeVilbiss Atomer or Nebulizer.

Fig. 399. The Reeder Transilluminator, manufactured by Sharp & Smith, Chicago.

The transilluminator has become an important diagnostic agent in otorinology. Thru its use, pathologic changes in many of the accessory nasal cavities hav become visualized. While the ful significance of the picture it portrays may be difficult to interpret, it rarely deceives as to the fundamental facts desired—the presence or absence of disease. The instruments now in common usage require the electric current, and some a reostat. They ar expensiv and of a size that does not permit them to be used within small cavities. I desire to call attention to an instrument, as illustrated, which not only overcomes some of these objectionable features, but also, on account of its size and shape, has a far broader field of usefulness.

It consists of a small dry cel battery mounted in a case similar to an ordinary flashlight, which has a small but powerful lamp mounted at the free end of a rodlike projection and protected by removable caps, one fenestrated at the side, the other at the end.

This instrument is conveniently carried, and is ideal for bedside use and in homes where other means of illumination ar not available. On account of its simplicity and its practicability it is an instrument that wil appeal to the general practitioner as wel as the specialist.

E THE PRESERVATION OF HELTH IN THE HOME

(Altho I hav written many articles similar to the following for various magazines, yet it does not seem out of place to giv it here.)

Now that the public schools ar teaching hygiene, even if the parents hav never receivd instruction along these lines, knowledge is carried into the home by the children who hav become enthused over the science of good helth. They ar taut the importance of proper bathing and the value of fresh air. They practis deep breathing and ar told to sleep with plenty of fresh air in their sleeping room. They ar taut to keep the teeth clean and ar shown the correct use of the toothbrush. Within a few years statistics wil not show that 90% of those past forty hav diseasd gums.

Altho taut much useful hygiene, the importance of *breathing thru the nose* has not been sufficiently emfasized. Children should be admonisht to do this night and day. In many cases it has been found advantageous to use isinglass plaster over the lips at night to compel the child to breathe thru the nose.

The nose is less an organ of smell than an organ of respiration, as it is able to change the temperature of the incoming air. It is also an important reflex center and directly affects the respiratory system. If it is occluded, every other fysiological process in the body is more or less changed. If there is any obstruction in the nose, medical advice should be sought. But it is very seldom, except from accident, that a surgical operation upon the nose is necessary if it is cared for in a hygienic manner.

Many persons ar under the impression that infectious diseases—like consumption, neumonia, grip, "colds," etc. —ar spred in some mysterious manner, and that going into the presence of an infected person may cause the disease. They do not realize that most of the infectous diseases that ar "carried" from one person to another, ar contracted because of breathing thru the mouth. If the nose is in proper condition and the person who is exposed to the disease breathes thru the nose, his immunity is greatly enhanst.

Expectorating and sneezing in public without proper protection of the nose come under the hed of "unclean habits" just as much as drinking from a common drinking cup. Handling unclean door nobs, hanging to straps on

trolly cars, handling unclean money, etc. pollute the hands and fingers. A person cannot always wear gloves nor carry a disinfectant, but he can cultivate the habit of not rubbing the inside of the nose with the tainted fingers, and can keep unclean objects from the nose as wel as from the mouth.

Air is surcharged with dust particles that carry disease-breeding germs. These lodge in the nose and throat with every breth. Therefore placing the fingers in or on these organs produces irritation, congestion, and even disease; for the membranous linings of the nose and throat ar exceedingly sensitiv and susceptible.

The question arises, why do we not all hav the same disease when we breathe the same polluted air? The anser is that our *resistance,* if it is good, prevents us partly or entirely from contracting disease in this manner.

Another feature of immunity is the resisting power of the mucous membranes of the nose and throat. In some people the mucous membranes ar very strong and helthy, while in others they ar not.

To remove these disease-bearing germs and to neutralize their virulent effects by thoroly cleansing every part of the nose and throat is a duty every person owes to himself as wel as to his family. To clense the nose and throat carefully every day should be as much of a routine as to brush the teeth. For this purpose an *atomer* may be employd to spray the proper antiseptic solution on the membranes. This wil reach every part of the nose and throat with an antiseptic, mild, and non-irritating solution, and means relief of irritation, freeing cavities from infectious particles, and increasing the disease-resisting powers of the membranes.

It is not necessary to use any "patent medicin" in the atomer. A teaspoonful of common salt and a teaspoonful of borax dissolvd in a pint of warm water makes a very effectiv wash for the nose and throat. Another simple and inexpensiv wash is made by dissolving a teaspoonful of common salt and a teaspoonful of baking soda to the pint of warm water. These, or any other solution for cleansing the nose and throat should be warm, or a little warmer than lukewarm.

With a suitable atomer any of these watery solutions can be redily sprayd into the nose and throat. After the watery solution is used, the nose can be carefully blown,

E care being taken to close one side of the nose at a time. Never blow both sides of the nose at one time. Every child should be taut this as it wil often prevent middle-ear difficulties.

After spraying, it is advizable to use an antiseptic, oily, nebulizing liquid. This coats over the mucous membrane of the nose and throat, and makes it far less liable to contamination.

For this purpose ordinary white hydrocarbon oil, sometimes cald paraffin oil or liquid vaseline, is all that is necessary. In order to make the oil antiseptic, a little thymol or menthol may be added. Any druggist can mix up a few ounces of this thymol-oil at a very small expense, and it wil last a long time.

It is now generally conceded that the "germs" of infantile paralysis ar carried to the system thru the nose, and that keeping the mucous membrane of the nose oild is a preventiv. When the oil is an antiseptic oil and is used thru a suitable nebulizer several times daily, infection is practically unknown. This profylactic mesure seems to enhance immunity.

For making a nebula, a regular nebulizer is required. If a good one is obtaind, it wil last a lifetime. A nebulizer breaks the oil up into a cloud that is inhaled. This passes thru the nasal passages and the bronchial tubes and is very soothing, especially where there is an inflamed mucous membrane.

In helth the frequent use of the atomer and nebulizer is the "stitch in time" which protects the nose and throat against infection. The tissues take on new life and enlarged glands, defness, and many kindred ailments ar prevented.

In sickness the regular use of the atomer and nebulizer relieves, soothes, and clenses. It destroys disease-breeding germs and frees the nose and throat of contaminating germs and other particles.

The child should be particularly garded against the danger lurking in the air—danger in the form of infectious impurities. His delicate nose and throat membranes ar much more susceptible to the ravages of malignant "germs" than those of the adult. Therefore extreme care and attention should be given to this matter in childhood.

Spraying and nebulizing of the nose and throat ar scientific methods of arresting nose and throat troubles,

bilding up strong, helthy, disease-resisting tissues, and preventing infection from disease-bearing bacteria. E

The atomer and nebulizer unquestionably hav their place in the home as much as do soap and tooth powder. It is as important that each member of the family has his or her individual atomer and nebulizer as to hav his or her individual tooth brush. Some may say that as children they had no such appliances as atomers and nebulizers. But neither did they hav tooth brushes.

What was "natural" fifty years ago is not "natural" in the same sense now, as our constitutions and environments ar changing all the time. For the crowded tenement, the packt street car, the smoke-laden air, and the hustle and bustle of present-day life, all tend to make our surroundings different from what they wer half a century ago.

E ECZEMA

Eczema is one of the most common cutaneous diseases that the physician sees. I shal not enumerate the different varieties as the plan of treatment is about the same for each.

If possible, find the predisposing cause and eradicate it.

Many of the best authorities seem to think that eczema comes with a "reumatic diathesis," altho they hardly ever exist together.

As in every other condition, do not giv constitutional treatment for the disease, but for the *patient*.

Always change the diet of a person suffering from this complaint.

Giv iodin therapy.

The location of the lesion must guide us in our treatment, but our first thot is soluble stainless iodin and the 3,000-candle-power lamp.

Along with the powerful incandescent light *always* use the quartz light. This plan wil eradicate the lesions in a remarkably short time.

If the lesions ar not too extensiv, 10% zinc sulfate used cataforically from the positiv pole wil many times work wonders. Five to 10 milliampères, depending upon the size of the electrode, for 10 minutes every second or third day is the proper procedure.

For local applications, oxid of zinc ointment is to be considerd. If you hav an oxygen-vapor generator, wet a piece of gauze in the used oil and apply to the lesion and cover with oild silk. Leave it in place about twelv hours. If reaction is too great, dilute it with paraffin oil.

For eczema of the scalp, there is probably no better application than this terpene peroxid, being careful to not produce too great a reaction.

Some hav had very good success with *carbenzol* (Abbott's), either pure or mixt with glycerin.

There is no skin disease that has to be treated according to individual idiosyncrasies more than eczema, but as a rule the method that produces the best general results is the 3,000-candle-power lamp in connection with the quartz light.

There is a French process termd "ecorchement" for removal of cloasma, acne, and manv other skin lesions, especially cronic eczema. I can do not better than to quote from Dr. Neiswanger's book, as follows:

"The treatment is divided into two parts. The first, E acting as a dry escarotic, destroys the epidermis together with the pigment underlying it. This is replaced by a soft and pliable new skin that is without blemish. It takes about ten days, does not destroy hair when applied to the margin of the scalp, and leaves no scar. The first part of the process is as follows:

Resorcin	40 parts
Zinc oxid	10 parts
Salicylic acid	2 parts
Lard	20 parts
Oliv oil	8 parts

Mix.

"This prescription must be mixt accurately and no substitutions made. Rub up the resorcin in a mortar until all the crystals ar thoroly broken down. Mix wel with the salicylic acid and zinc oxid. Do not substitute vaseline or any other vehicle for the lard.

"This substance is rubd on the part to be treated twice a day until the skin assumes a crackt and dry appearance just as if chapt; which generally takes four or five days. Then the part is carefully washt with a sponge and soap to remove any residue of the ointment, and after being thoroly dried is redy for the second part of the treatment.

"This consists of a paste very similar to our old surgical glue and is as follows:

White gelatin	130 parts
Zinc oxid	8 parts
Glycerin	1 part
Boiling water	q.s.

"This should be prepared on a water bath by first adding sufficient water to dissolv the gelatin, and then stirring in the other ingredients. It is applied as hot as the person can bear it, using for this purpose a painter's fine-hair brush.

"Before this preparation has had time to dry, it should be coverd with a sheet of absorbent lint and another coat of gelatin paste applied over the lint. In two or three days this mask becomes loose around the edges and may be re-

Emoved—the dried skin together with all discolorations coming away without aid."

For curing localized areas of eczema, *freezing* wil often work wonders. Don't forget to treat the *patient* as wel as the diseasd areas.

Don't forget to try the quartz light.

ENDOCARDITIS

(*See Hart Disease*)

ENTEROSPASM

(*See Intestins*)

ENURESIS

This is often caused by a nervous reflex about the genitals. Examin wel the external genitals and put them in proper condition. Sometimes stretching the vagina wil remedy this trouble in young girls.

When the involuntary discharge of urin occurs during the day, it generally is a symptom of weakness of the muscles about the neck of the bladder or lack of nerv control. *Treat the cause.*

The Nocturnal Type of Enuresis

Bed wetting occurs most often in children, altho many adults hav this affliction.

Probably one of the best fysical mesures is stimulation of the 5th lumbar vertebra. This can be accomplisht either by the Pulsoidal Current, slow-sine current, manual manipulation, powerful light energy, vibration, or concussion.

Radiant-light therapy and quartz-light therapy ar valuable adjuncts in treating enuresis.

Dietetic mesures must be rigidly carried out. I find the best plan is to see that the patient, whether child or adult, eats only very easily digested food, especially after midday, and that they eat and drink nothing at least four hours before retiring.

For internal medication probably atropin sulfate, used in the following manner, is the best remedy: Ad 1 grain to 1 ounce distild water. Of this mixture giv one drop

for each year of age up to 4 years. Probably this dose is E
sufficient for all ages up to 12, after which 5 drops can be given if necessary. Dr. C. F. Dunham recommends giving the dose at 4 and 7 p. m.

Suggestion has a great effect upon the curing of enuresis. Some of the most obstinate cases can be cured by suggestion alone.

Always examin the urin to see whether there is any organic trouble. Raise the foot of the bed from two to six inches. This wil keep the urin from reaching the neck of the bladder so soon.

Be sure the bladder is wel emptied before retiring.

EPISTAXIS

(*See Hemorrage*)

EROSIONS

(*See Cervicitis and Erosions*)

ERYSIPELAS

For this condition probably radiations from the powerful incandescent lamp is our best therapeutic agency.

Quartz light is considerd by many to be superior to any other form of light energy. I think the combined light therapy is the best of all.

Hot packs to the lower part of the body ar advized by many to reduce congestion in the hed. Some advocate a *continuous hot bath* or hot pack in erysipelas the same as for measls, scarlet fever, etc.

Because of the sedativ action upon the central nervous system and because of its influence upon the circulation, which augments nutrition and the healing processes in the skin, *radiant heat* is no doubt superior to dark heat.

When radiant heat cannot be obtaind, probably the dark heat is the next best agency.

Altho the continuous hot bath or pack is more troublesome to administer, yet it appears to be an exceedingly effectiv remedy.

The *dietetic mesures* in erysipelas should be very rigidly enforst. A plain, nutritious diet, cutting out all condiments, meats, alcohol and tobacco, should never be neglected.

E *Keep the bowels open* if possible thru dietetic mesures rather than thru the effects of cathartics.

During convalescence do not forget to use the powerful radiant light and if possible, the quartz light over the spine.

ESOFAGUS, DISEASES OF

Esofagitis

Feed with non-irritating foods such as milk, cream, egs, gruels, etc. Use powerful radiant light over the esofageal region.

Ulcer of the Esofagus

Altho this condition is rare, sometimes the offis specialist is confronted with it. Regulate the diet the same as for esofagitis and over the ulcerated region use compression-radiation with the quartz light.

Stenosis of the Esofagus

This is probably best treated by means of graduated, conical metal bulbs on a flexible spiral introducer or staf guided by thred. Use great caution in doing the dilating. Probably the Sippy method of passing these bougies is as good as any, if not better. He advizes the swallowing of about 25 yards of No. 8 braided surgical silk. The first yard is placed in a perforated capsule and the rest wound on a spool fastened to the clothes. The first day the capsule is swallowd. Then the patient should gradually swallow one or two yards more each day until the 25 yards hav been swallowd. He says that a silk thred wil go thru any stricture that wil permit the passage of even a small quantity of water. Inasmuch as each conical bulb is provided with a central canal that is continuous with the lumen of the spiral introducer, the introducer and bulb can be thredded on to this silk and the silk acts as a guide for the dilator.

Spasm of the Esofagus

The offis specialist often meets this condition in hysterical women. It is best treated by means of suggestion or placebos, as wel as by massage and general constitutional treatment.

I find powerful radiant light energy over the throat and stomac region is very efficient in treating this condition.

Sometimes if the patient is given a good sized gelatin capsule fild with oliv oil and told to swallow that whenever she feels the "spasm" coming on and it wil prevent the spasm, it wil act as suggested. E

EYE AND ITS APPENDAGES

Electricity in the form of a constant or sinusoidal current is of great therapeutic value in the treatment of a great many diseases affecting the eye.

The powerful incandescent lamp as wel as the quartz light wil do more for diseases of the eye and its appendages than any other one modality, yet they ar overlookt by most oculists.

Colord lights in various forms ar of great benefit in many diseases of the eye and its appendages.

The high frequency current thru a vacuum electrode is also of some benefit in treating the eye.

For removing *displaced cilia,* nothing can compare with the electrolytic needle.

For relieving or curing *hordeolum* (sty) nothing is of more value than the powerful incandescent light or the quartz light. Probably the quartz light is the best modality for styes.

Some use x-ray for treating the eye and its appendages, but I think there ar other forms of electricity that ar just as efficient which can be used without the danger attending x-ray.

For *blefarospasm* nothing can compare with the pulsoidal current, if correction of refractiv error does not overcome the trouble.

For *conjunctivitis,* use the powerful incandescent lamp or the quartz light. In some cases oxygen-vapor direct to the membranes is of great value.

For *gonorreal ofthalmia,* the powerful incandescent lamp and the quartz light ar of value. Of course use the silver salts to destroy the gonococci.

For *tracoma* many report satisfactory results from the use of the intermittent Roentgen ray. Others report better success by means of cupric cataforesis or "electric medicament diffusion." For this purpose I use a special copper electrode. I prefer cataforesis to the x-ray.

E The quartz light is of great value in treating tracoma. Some use high frequency thru a surface vacuum electrode for tracoma and report very good results.

For *stricture* of the lacrymal passages negativ galvanism thru a silver electrode seems to be the best.

For *tuberculosis* of the eye, treat as for tuberculosis in any other part of the body, but giv powerful incandescent light treatment to the eye itself, while the eye is closed. Quartz light seems to be best of all.

Glaucoma has been very successfully treated by means of high frequency currents thru the special vacuum surface electrodes. Another method that some use is negativ galvanism with the indifferent or positiv electrode over the 6th and 7th cervical vertebrae. I hav used the pulsoidal current with good results.

For *cataract* in its incipiency, many ar reporting great success from using negativ galvanism by means of the binocular electrode. The indifferent or positiv electrode is placed over the 6th and 7th cervical vertebrae during this treatment. The pulsoidal current is perhaps the best modality.

Some use potassium iodid solution cataforically along with negativ galvanism. For this treatment from 4 to 7 milliampères of current can be used for about 10 minutes. I hav some reports from physicians who hav apparently cured incipient cataract by means of the powerful incandescent lamp alone. Quartz light is being used, but it is too erly to say what the result wil be.

Galvanic treatments should be given daily, or every other day, and the light treatments every day. No doubt *incipient* cataract can be cured by electricity, but mature cataract, as far as I know, can be cured only by surgical extraction.

If a person has diabetes, liver, kidney, or other organic disease, improvement is not very satisfactory until the organic trouble is partially cleard up.

Muscae Volitantes—"Specks Before the Eyes"—if persistent after errors of refraction ar corrected, can often be cured by means of the pulsoidal current, used the same as for opacities of the vitreous.

For *opacities of the vitreous,* no doubt negativ galvanism in connection with the pulsoidal current is the treatment par excellence. For this work I use the binocular sponge electrode wet with a sodium clorid solution while the indif-

ferent electrode is placed over the 2d and 3d cervical vertebrae.

Altho *Optic atrofy* is universally acknowledged to be the most hopeless condition we hav to deal with, yet interrupted galvanism to the lids as wel as pulsoidal current wil bring about most astonishing results.

I think the pulsoidal current, or the high speed slow-sinusoidal current, applied thru the binocular sponge electrode with one electrode over the 2d and 3d cervical vertebrae, is the proper treatment to be given for 10 minutes daily. I giv as strong a current as the patient can tolerate.

For *inequality of muscular tension,* I know of nothing better than the slow-sinusoidal current, or the pulsoidal current. These interruptions can be given quite rapidly as the muscles we hav to train ar very short and quick in reacting. This method of equalizing the power of the muscles seems to be better than prism exercizing.

Where some of the ocular muscles seem to be paralyzed, this treatment, in many cases, wil greatly benefit, if not cure the condition.

For a moderate amount of *strabismus* (squint), the slow-sinusoidal current applied thru the special copper electrode with one pole over the 2d and 3d cervical vertebrae, in many cases wil correct the condition without operation. Of course we must place the electrode so as to put the contracted muscle on a stretch and at the same time contract the muscle that is too long.

For *alcoholic or tobacco amblyopia,* discontinuance of the toxic agent wil, in most cases, correct the condition. However, the slow-sinusoidal current or the pulsoidal current for 10 minutes daily to the eyes wil greatly hasten the resolution.

A whole treatis can be written on electricity in diseases of the eye, and for anyone who is interested in this subject, I would recommend Dr. W. Franklin Coleman's work on *Electricity in Diseases of the Eye, Ear, Nose and Throat.* This work is doubtless the best work on the subject that has ever been publisht.

FAINTING

If fainting occurs with a white face, it means cerebral anemia and that is best treated by *stimulation* of the 6th and 7th thoracic vertebrae.

F If fainting occurs with a red face, it shows congestion in the hed and for that use *prolongd* stimulation of the 6th and 7th thoracic vertebrae so as to produce *relaxation* of the splancnic area.

Another remedy for "red face" fainting is putting the feet in hot water and putting cold cloths on the hed.

For habitual fainting spels, treat the underlying cause. So far I hav found no fysical mesure that can compare with powerful radiant light energy.

Never forget to throw cold water in the face.

FATIGUE

Seek out the predisposing cause. It generally indicates some profound toxemia if it is not caused by overwork. Test the patient Bio-Dynamo-Chromatically to ascertain the etiological factor.

Powerful radiant light energy (incandescent light and quartz light combined) as wel as electric light baths, massage, and the magnetic wave current ar all indicated in this condition. Find the cause and treat accordingly.

FAVUS

(*See Skin Diseases*)

FELONS

The best method of treating a *felon,* if pus is alredy formd, is to open it and then use the quartz light on it, using the compression radiation. If you hav not the quartz light, put the finger into as hot water as can be borne for one hour changing the water every few minutes to keep it hot.

The best dressing I know of for a felon is *libradol* (Lloyd).

For *aborting a felon,* the quartz light with compression radiation is probably the best method.

Anyone who has felons has trouble with the whole constitution. Put them on a fast, clear the bowels, restrict the diet, and give *calcium sulfid* (Abbott). (*See Furunculus. See Carbunculus.*)

FOLLICULITIS

(*See Skin Diseases*)

FOOT AND MOUTH DISEASE

Altho this disease (aftha epizoötica) is a contagious febril disease very common among animals, yet it is often communicable to man. This disease is self-limited and caracterized by a vascular eruption on the buccal mucous membrane, the lips, and the skin of the fingers. Altho many animals hav been kild because of this disease, if they wer isolated and let alone for a few weeks they would get wel.

Antiseptic washes ar good for local treatment in animals and in man. The quartz light used heroically thru suitable quartz applicators is the best local treatment.

FUNCTIONAL TREMORS

(*See Tremors*)

FURUNCULUS (BOILS)

For the treatment of boils, I know of no remedial agency that can compare with the *Actinic Rays* from the quartz, mercury-vapor lamps—quartz light. This method of curing, or aborting boils is nearly specific.

Another valuable modality is radiations from the 3,000-candle-power lamp. If the boils hav come to a hed, they must be lanst and this operation should be followd with the hyperemic vacuum cup. After the hyperemic treatment has been given, apply soluble iodin along with the powerful light and keep the area wel coverd with soluble iodin preparation or pure carbenzol. Insted of carbenzol one can use a 50% creolin and glycerin solution.

Enhance elimination by general treatments with the 3,000-candle-power lamp, electric light baths, etc., as wel as by magnesium sulfate taken in hot water on arising in the morning.

An ethereal solution of menthol, 10% to 50%, applied with a camel's hair brush, or cotton applicator, often aborts boils, carbuncles, and inflammatory gatherings; and aids in curing itching eruptions.

Another method of treating boils is to paint a ring of flexible collodion around the boil several times daily. This in many instances, wil cause the boil to soon open.

While treating boils, giv *calcidin* (Abbott's), or some other form of iodin. I giv one to three grains of calcidin t.i.d. between meals, in hot water. Iodin therapy and calcium sulfid ar valuable adjuncts.

When treating boils, do not forget nascent iodin.

Pure ozone forst into the lesion is specific in most instances. Oxygen-vapor inhalation along with B-D-C therapy is also of great benefit.

G GALL BLADDER DISEASE

Symptoms

By means of air-colum percussion it is a very simple matter to map out the gall bladder area. If pain is elicited by pressure over this area, we know that some inflammatory condition is there present.

Catarral condition of the gall bladder is very common and givs very many insidious symptoms, many of which ar attributed to tuberculosis. Sometimes there ar mild gastric disturbances, or gas symptoms, especially upward pressure soon after taking food. These gas symptoms may be very regular or come on suddenly. These pressure pains ar mitigated by belching of gas or by vomiting a very little.

Sudden, mild dyspeptic attacks ar also typical symptoms of gall bladder disease, and treatment for gall bladder disease should be instituted as soon as these symptoms ar known.

When the gall bladder disease has progrest farther, there wil be a prolongd dul pain in the whole liver region, said pain being augmented by food or motion. Many times deep inspirations wil cause pain thru the liver region, and such pains ar wrongly diagnosed as *pleuritic pains*.

Often gall bladder disease is diagnosed as *gastric ulcer*.

When there is a sudden, severe pain radiating thru to the back or scapular region with spasms of the diafram, nausea and vomiting, stones or concretions in the gall bladder can be almost surely diagnosed. A sudden severe attack with a sudden cessation of pain is a diagnostic feature of gall stone disease.

As gall stone formation in the gall bladder seems to be invariably preceded by an infection in the gall bladder or ducts, it shows how important it is that treatment be given with powerful light energy as soon as any of these gall bladder symptoms arise.

One peculiar feature of gall bladder disease is that nearly 75% of the cases presenting these symptoms ar women.

Syfilitic or gonorreal infection wil also cause many gall bladder symptoms, which entirely clear up when appropriate treatment is given.

Diagnosis

Stones or concretions in the gall bladder may be diagnosed by having the patient lie on the back and slowly exhale until their lungs ar as empty as they can make them. At the same time the physician should make stedy pressure just under the edge of the ribs over the gall bladder. Keep making stedy pressure until the fingers ar as deeply seated as possible. Then hav the patient take a slow, stedy breth, expanding the chest as much as possible. If any stones or concretions ar in the gall bladder, the patient wil suffer pain, and that is nearly always a diagnostic symptom of foren bodies in the gall bladder.

Treatment

For large concretions surgical interference is imperativ, but for smaller ones the non-surgical method seems to be more efficient than surgery.

Dietetic mesures ar first to be thot of and a 24 to 48-hour fast, followd by a diet of Horlick's malted milk, shredded wheat biscuit and spinach is to be recommended.

Keep the bowels open by means of podofyllin and a mild saline laxativ.

The *fysical mesure* abov all others is radiant light with the powerful incandescent lamp in combination with the quartz light over the liver region.

I hav obtaind better results from prolongd radiation from the incandescent lamp than from any other mesure.

The quartz light is a regulator of metabolism and for its great profylactic power is always to be used if possible.

This radiant light treatment I follow with B-D-C therapy and oxygen-vapor inhalation.

G Many a physician has had the credit of curing tuberculosis as wel as ulcer of the stomac by using powerful radiant light energy over the gall-bladder region, following out the methods abov enumerated.

(*See Liver.*)

GANGRENE

If the destructiv process has not gone too far, much can be done toward restoring the circulation by means of powerful radiant light energy—incandescent light and quartz light combined. If one can hav only one of these modalities, the quartz light is to be preferd.

GASTRALGIA

(*See Gastric Diseases*)

GASTRIC CANCER

(*See Gastric Diseases*)

GASTRIC DILATATION

(*See Gastric Diseases*)

GASTRIC DISEASES

Of course in all gastric diseases the first procedure is to regulate the diet. After that I use radiations from the 3,000-candle-power incandescent lamp and also the quartz light, along with stimulation at the indicated area of the spine—usually the 5th and 6th thoracic vertebrae. The radiations from the lamps seem to work like magic upon the gastro-intestinal tract.

My *tecnic* for using this powerful light is to place the lamp from 30 to 36 inches distant from the body and let the light radiate over the stomac from 20 to 60 minutes. I then begin one-minute exposure to the quartz light and increase it reducing the incandescent light til both can be used together for ten minutes.

Sometimes it is wel to precede this treatment by 5 to 10 minutes' treatment over the back, especially over the

thoracic region. If you hav a static machine, the static- G
wave current with the electrode over the stomac is also very beneficial.

There ar some forms of stomac conditions, especially in which there is lack of motiv power, for which the slow-sine wave or the pulsoidal current should be used. For this purpose I put a medium sized clay pad in contact with the 5th and 6th thoracic vertebrae and another over the stomac.

Should the stomac be *dilated,* place the electrode over the 1st, 2d, and 3d lumbar vertebrae and the other over the stomac. These treatments should be given with the patient lying on the back and the light from the powerful incandescent lamp radiating over as much of the abdomen and thorax as is not coverd by the pad electrode. These treatments not only strengthen the stomac muscles, but the abdominal muscles as wel.

Zone therapy should never be forgotten in all gastric pain.

If there is *gastroptosis,* elevate the stomac with a suitable supporter.

In nearly all non-malignant gastric diseases, such exercizes as wil strengthen the abdominal muscles ar indicated. I must especially mention *deep abdominal breathing* and such exercizes as ar indicated in visceroptosis.

Dietetic mesures must be carried out, but they can be found in almost any standard textbook, so I shal not go into them. Drinking of cool water seems to enhance the flow of gastric juice.

Often I find that fruit, eaten before the "meal," "lies like led" on the stomac. In such cases, have the patient eat the fruit *after* the "meal" rather than before.

The latter is the better plan as a rule.

Whenever *gastric ulcer* is suspected, never fail to use the B-D-C method of diagnosis, and if you get the *B*-MM VR, localize the lesion and begin vigorous mesures for therapeutically treating a malignant growth.

I cannot say that I would advize an operation, as it seems as tho the non-surgical procedure gave far better results than the surgical. I hav known of patients living for years with what has been diagnosed by the "best men" as cancer of the stomac, but I hav never seen anyone live very long after a *cancer* of the stomac had been surgically removed.

G It is hard to advize on this point as so many circumstances alter cases. Some patients would not hav a surgical operation while others would if so advized.

There is no doubt but that some gastric cancers hav been eradicated by therapeutic mesures. I say this advizedly because I know that those who hav not workt along these lines wil hold a contrary opinion, but however this may be, I *know* I am correct in my statement. Putting a patient with a cancer under ether lowers the resistance and enhances metastasis of the "propagating properties" of the growth.

An *erly diagnosis* for cancer of the stomac is the all important point. If the diagnosis can be made so the patient can begin vigorous treatment as soon as the first B-D-C reaction shows cancer, the chances ar very good that the patient wil be cured.

I should like to call your attention to *red clover* or alfalfa tea for cancerous conditions, especially in the alimentary canal.

The *tecnic* for making this tea and using it is as follows: Gather the red clover or the alfalfa while it is in blossom. It can then be cut up and put into a large coffee pot and enuf hot water put on it to cover it, when it should be allowd to slowly steep for about six hours. Another way is to let the blossoms dry. In that case a less quantity is used and the steeping should last about twelv hours. Strain the water off and let the patient drink three or four teacupfuls of this tea daily.

The *dietetic mesures for cancer of the stomac* ar generally known, but for the benefit of those who ar not posted on this subject, I wil say that abstinence from proteids is very essential. Give a very bland diet. It is almost impossible to lay down any fixt rule for this, as the diet that wil prove beneficial with one person wil aggravate another. Sometimes the diet has to be radically changed every two or three days. The object is to giv a diet that is as non-irritating as possible. Some think that paraffin oil, a tablespoonful taken before each meal helps to reduce irritation. I hav some patients with cancer of the stomac who hav gotten along very wel for a long time on a diet of *Horlick's Malted Milk* and clam juice. Rice, baked potato, vegetable soups, etc., ar often very wel borne.

If a person has a *quartz, mercury-vapor lamp,* I should advize the careful use of the radiations from such a lamp

over the stomac area along with the radiations from the powerful incandescent lamp. G

No matter what modality is used for treating ulcer or cancer of the stomac, never neglect to use oxygen-vapor inhalations and the indicated intermittent color.

For washing the stomac in gastric catar, I procede as follows: I giv the patient a pint or so of a hot, boric acid solution, and then slowly shake the body in an oscillator, after which I stimulate the 5th thoracic vertebra and let the patient lie on the right side for a few minutes. In most cases I find this more effectual than using the stomac pump, which is very obnoxious to many patients and is not free from danger. The stomac pump certainly is irritating and should not be used when any other method wil suffice.

I cannot say that my experience with "test meals," "stomac buckets," etc., has been very satisfactory. I find that the general therapeutic mesures cited abov wil correct most conditions, no matter what the cause may be.

As in every other disease, find out as far as possible what the predisposing cause is and remedy that.

I do not think the test tube or experiments on animals ar very reliable in guiding us in treating gastric conditions in *man*.

Do not forget that the *psychic influence* in gastric conditions plays a most important role. Many times some means used by one physician with the same patient wil be ineffectual, while with another it wil be very efficient.

Gastralgia

For this I employ stimulation of 5th and 11th thoracic vertebrae, and giv one whole tablet of *chinosol* in a glass of hot water, or use the following:

R Cloroform
Comp. Tinc. Cardamon
Aromatic Spts. Ammonia
Brandy—aa ..... 30 mils

Sig. Shake wel and giv one teaspoonful every ¼ or ½ hour til relievd.

Use also the radiations from a 3,000-candle-power lamp over the stomac for a half to one hour.

Pyloric spasm is often mistaken for cancer of the stomac. The best treatment for this condition is powerful

Gradiant light energy and the slow sine current with a weighted pad over the stomac region. Regulate the diet.

Bulimia (insatiable hunger). This condition is usually caused by a catarral condition of the stomac. A fast of from one to three days and a greatly restricted diet is of paramount importance.

After this, use fysical mesures the same as for gastritis.

Anorexia (lack of appetite) is usually caused by a reflex. Discover the cause and treat that.

Rumination (Merycism or *Regurgitation* of food). This condition is usually caused by catar of the stomac or a stomac neurosis. The treatment is to put the patient on a fast of two or three days and then put them on a very restricted diet.

Fysical treatment is the same as for gastritis.

Vomiting. The forcible expulsion of the contents of the stomac thru the mouth is caused by a reflex or from an accumulation of gas. Treat the cause.

Cyclic vomiting is vomiting which occurs at regular or irregular intervals. This is also cald *periodic vomiting* or *recurrent vomiting.*

This in a young person is a very serious condition, but it can be cured by treating the general condition of the patient as well as putting them on an extremely restricted diet.

Often a neurosis is responsible for cyclic vomiting. Again Bright's disease or diabetes may be the predisposing cause. At any rate it is a neurosis, and it is necessary that the physician ascertains the underlying cause of the neurosis.

Many times the gall bladder is at fault and it is deranged because of improper eating.

Cyclic vomiting is often the cause of migraine because with the vomiting begins a fearful hedake and then a vicious circle is establisht.

The best fysical method for treating this condition is to use combined powerful incandescent light and quartz light with oxygen-vapor and B-D-C therapy.

Important Observations, Gastric Diseases

I want to especially mention the fact that many patients complaining of "dyspepsia" ar really suffering from patho-

logical conditions in the gall bladder. By carefully examining a patient and mapping out the gall bladder by aircolum percussion, I am able to prove that the gall bladder is sensitiv by simply pressing on it with the finger. These patients ar generally suffering from varying degress of colecystitis. It is not a sign that the patient has gall stones because they have an inflammation of the gall bladder. It must be rememberd that gall stone is a *terminal* result and not the initial cause of colecystitis. G

The rational *treatment* for this form of "dyspepsia" is powerful radiant light and heat directed over the region of the gall bladder. To this ad the quartz light if possible. For internal medication, probably nothing is better than oliv oil, altho there ar very many proprietary remedies on the market for this condition.

In many gastric diseases concomitant with pathological conditions in the gall bladder and ducts, I hav found the slow-sinsoidal current to be very beneficial provided there ar no concretions. For such treatment I put the clay-pad electrode over the area of the gall bladder and over that place a sand pad. It is wel to put the indifferent electrode in the rectum.

The *Pulsoidal Current* used for 5 minutes seems to be even better than the slow-sine wave used for 10 minutes.

Gastric Diseases Caused by Syfilis

I want to especially mention the fact which many physicians do not realize, and that is that many cases of gastric dyspepsia ar caused by syfilis.

In using the Bio-Dynamo-Chromatic method of diagnosis I often find patients giv the syfilitic MM VR who come for advice regarding "dyspepsia" or some other gastric condition. When these patients ar treated with the powerful radiant light over the gastric region and ar given the treatment as outlined for syfilis, they make very rapid recovery.

Clinical Case: Ulcer of Stomac

Case 282

Mrs. L. Age 50. Menstruating regularly. Mother of two helthy adults. Had gastric pain for two years, which kept her awake nights. Severe burning in the esofagus and

G constant coffing during the day because of it; pain radiated to right scapula-vertebral border; aggravated by hot food or drink; relievd up to two weeks before I saw her, by lying on her back. Had no appetite. The case had been diagnosed as *ulcer on the anterior wall of stomac.* I examind her and found the stomac of normal size, but very tender at the cardia and fundus. Also tenderness between the four upper thoracic vertebræ and between the first and second lumbar. The urin showed acid equal to 58 N/10 sodium hydrate, but nothing else abnormal.

I vibrated sensitiv nervs to inhibition of pain, exhibited powerful light over the stomac for 20 minutes and the same length of time over the back abov the waist line. I gav static-wave treatment over the fundus for 10 minutes. Before leaving the offis, the patient said all pain and soreness wer gone, and she did not cof. Next day she reported a good night's rest and only slight pain fifteen hours after the first treatment. I gave repetition of the first treatment on three consecutiv days, and after eleven days patient reported having had no pain, no coffing, and good night's sleep since the second treatment. I put her on a diet and reduced the acidity of the urin to 28 N/10 sodium hydrate. No return of the trouble after a year's observation.

GASTRIC ULCER

(*See Gastric Diseases*)

GLANDERS

Altho this is a disease naturally occurring among horses, yet it is transmissible to man. I hav had one case that appeard to be an infection from the bacillus mallei.

Bacteriological examinations ar necessary for a true diagnosis of this condition.

Powerful radiant light and quartz light ar the modes to use in treating this condition.

Non-irritating nasal washes ar required.

Iodin therapy is indicated.

GLANDULAR FEVER

Altho it is doubtful whether there is any such disease *per se,* yet one wil occasionally find a condition where the

cervical glands ar enlarged and the patient is running quite a fever. Such conditions ar often diagnosed as tubercular. Many times they ar with a mixt infection. The B-D-C method is the one for diagnosis, and that method wil differentiate the disease from tuberculosis. G

The treatment is to clear out the system wel and use calcium sulfid internally as wel as iodin therapy.

The quartz light over the enlarged glands and the combined powerful radiant light energy over the entire body is indicated in this condition. Watch the urin wel in these conditions and take profylactic procedures so that the kidneys wil not become affected.

The quartz light for the local infection is without doubt the treatment par excellence.

If any constitutional symptoms resembling furunculosis present themselvs, general treatment the same as for furunculosis is indicated.

GLOBUS HYSTERICUS

(*See Gastric Diseases*)

GOITER

Under this term may be included most of the non-inflammatory enlargements of the thyroid gland. The right lobe is more frequently affected than the left. It generally develops about puberty or during erly middle life, and is more frequent in women than in men.

The etiological factors ar heredity, congestion, and the drinking water. Wearing a tight band about the neck is a predisposing factor. Just what there is in the drinking water that causes this condition, no one seems yet to know; but a change of water, or boild or distild water should be used by anyone residing in a section where there ar many cases of goiter.

We ar all familiar with the hart condition, hedake, and other digestiv and nervous symptoms that ar often concomitant with this disease. Posterior auricular neuralgia, as wel as pain thru the sterno-cleido-mastoid muscle, is often caused by goiter.

G We may or may not hav exofthalmos with this condition, but often it is present and also irritation of the sympathetic nervs.

We may or may not hav any enlargement of the thyroid gland with hyperthyroidism. In other words, we may hav all the *symptoms of goiter* without any enlargement of the gland.

In treating this condition, try to find the predisposing cause and remedy that. *General change of diet and water* ar very beneficial, no matter where the patient may be living. Remedy any unhygienic conditions that can be found. Look for *abnormal pelvic conditions,* as they ar almost always present. Correct them by fysical means. This also applies to constipation and any derangement of the digestiv tract. In fact, make a thoro examination of the patient from hed to foot, including internal pelvic examinations. Sometimes visceroptosis, from its effect upon the thoracic vessels, is a predisposing cause.

Post-operativ reflexes ar often the cause.

Treatment of Goiter

Zone therapy appears to be the most efficacious treatment yet discoverd for goiter—either simple or exofthalmic. For this purpose I hav devized special electrodes. (See Zone Therapy.)

If one cannot use electricity for this zone therapeutic work, they can use a metal nasal probe that wil reach back to the posterior wall of the nasofarynx.

This is fully described in the lecture dealing with zone therapy.

Stimulation of the 6th and 7th cervical vertebræ wil do much toward the cure of goiter. Some think it is the best treatment, owing to its increasing the sympathetic-vagal tone.

The pulsoidal or slow-sinusoidal current may be used for this stimulation, placing the small electrode over the 6th and 7th cervical vertebræ and the large one over the sacrum, this treatment to continue for 10 minutes. Concussion can also be used.

In connection with this treatment, I use soluble stainless iodin over the enlargement and giv treatment from the 3,000-candle-power lamp for about 10 minutes over the chest and neck and 10 minutes over the back.

As a rule, I find iodin in some form to be very beneficial in *simple* goiter. Soluble, stainless iodin has an advantage over the other as it does not irritate the skin. Using it in connection with the 3,000-candle-power lamp seems to be an ideal auxiliary procedure. G

In many cases of goiter I hav found *internal iodin medication* to be very beneficial. The only precaution in the administration of iodin in these cases is to watch the hart. If it is increast in rapidity, stop the iodin therapy.

Actinic rays from the quartz, mercury-vapor lamp (quartz light) hav a very friendly action in the treatment of goiter. Some say they can rely on this method more than on any other one modality. They ray the growth first and then the whole body.

A method for treating *simple* goiter is by negativ galvanism and iodin. A 10% solution of potassium iodid used from the negativ pole while the indifferent pole is placed over the abdomen or back, is by some considerd excellent. For this purpose the regular cataforic electrode should be used, or one made of block tin, as previously described. Ten to twenty milliamperes of current for 10 minutes can be applied about every other day. When using galvanism about the neck watch the hart.

For *exofthalmic* goiter I would not advize cataforesis. Galvanism is contra-indicated in tachycardia or any case of goiter where there is nervous irritability. The reason is plain, as a branch of the vagus passes directly over the thyroid cartilage. Galvanism over this area stimulates the vaso-motors and obliterates the action of the sympathetic, thereby increasing the puls rate, which should be avoided.

I hav purposely mentiond several methods for treating this disease. Of course if the gland has become organized into fibrous tissue, we cannot hope to reduce that, but the general condition of the patient wil be greatly improved. In other words, she wil be *symptomatically cured.* Some times a gland wil not begin to show any decrease in size until after daily treatments for six weeks, after which period it may begin to decrease very rapidly. In other cases the gland wil show a diminution in size after ten treatments.

Exercize for Goiter

A great aid in treating goiter of any kind is an exercize consisting of the forcible extension of the neck. This maneuver is carried out as follows (see lecture on Exercize):

G Let the person stand upright with the neck flext. Hav her very gradually lift the hed until she is looking strait up at the ceiling. As the hed is brot back into position, let it be done very slowly. This maneuver should be carried out 10 to 20 times every night and morning. The object is stimulation of the vagus thru the sympathetic.

This same exercize is very beneficial in hart affections.

Formula for Goiter

This formula was given me by an old and successful country practitioner and he reported very many cures from its use. I giv it for what it is worth:

Resorcin	1.5 gms.
Tinc. capsicum	8.0 mils
Tinc. cantharides	15.0 mils
Biclorid of mercury	0.1 gms.
Boracic acid	0.5 gms.
Salicylic acid	2.0 gms.
Aqua q.s. ad	120.0 mils

M. sig. Apply morning and evening with little friction. If much tenderness, omit an application.

Goiter—Clinical Cases

Case 283

Miss G., 26 years old. Was sent to me three years ago for diagnosis and treatment. She complaind of extreme nervousness and dysmenorrea. Upon examination I found she had a simple goiter and her uterus was retroverted. I began at once treating her with the slow-sinusoidal current, one pole being attacht to my special uterin elevator and electrode and the other to a clay pad over the abdomen.

While giving her this treatment the radiations from the 3,000-candle-power light wer directed over her abdomen. I followd this stimulation of the 6th and 7th cervical vertebræ and oxygen-vapor inhalation with B-D-C therapy for 40 minutes. These treatments wer given daily for one month.

Her following menstrual period she told me was easier than any she had had in eight years.

As I was going to be away for about two months, I told her she had better go out in the country and follow up outdoor life and practis the gymnastics for her pelvic condition as wel as hyper-extension of the neck for the goiter.

Her third period after this was "without any pain whatsoever." I saw her six months after the treatment and her goiter was entirely gone, all nervous symptoms had disappeard, and her dysmenorrea was entirely cured. She has had no return of these troubles in a long time, has gaind in flesh, and says she feels like a "new woman" and as if life wer worth living. She has recently married. G

Case 284

Miss H., 24 years of age. Scool teacher. Was sent to me for diagnosis as to the cause of her extreme nervousness. I found she had tachycardia, and altho she showd practically no signs of goiter, I diagnosed the case as hyperthyroidism.

I prescribed exercizes such as I advize for pelvic diseases. I also prescribed the neck bending exercize.

Six months after she began these home treatments her mother reported that she was entirely cured and was able to attend to her scool duties in a way she had not been able to since she began teaching.

Case 285

Miss D., 30 years of age. Scool teacher. Complaind of extreme nervousness. Upon examination of the neck I found quite a large goiter and prescribed zone therapy for it. Within two months all signs of the goiter disappeard without any treatment other than that of using a metal probe at the posterior farynx at the indicated zone. As she lived some distance from the offis, she had these treatments only once a week. The other treatments she gave herself about four times daily.

I could mention very many cases of goiter which hav been reported to me by my pupils that hav been cured, or greatly relievd, by following out methods similar to those abov cited.

The following case was reported by Orin W. Joslin, M.D., Medical Director Dodgeville General Hospital and Pine Grove Sanitorium, Dodgeville, Wis., under date of Jan. 5, 1918:

Case 286

C. D., man aged 28. Goiter. Could hardly breathe when he came to the hospital. Puls 130. Goiter mesured 28

inches. The only treatment given was zone therapy in the upper farynx with the Pulsoidal Current, 5 minutes on each side, and stimulation of the 7th cervical vertebra. In two days the goiter was reduced 2¼ inches and the puls was reduced to 80.

S. Edgar Bond, M.D., Richmond, Ind., reports as follows:

Case 286

Miss H. Aged 23. Had all the symptoms of advanst exofthalmic goiter with a large deformity of neck. My treatment was deep massage with iodex ointment along with concussion stimulation of the 6th and 7th cervical vertebræ, deep cervical manipulations over the gland along with bipolar sinusoidalization at the junction of the 6th and 7th thoracic vertebræ for the control of the unbalanst sympathetic vagal system. Used iodin cataforically occasionally over the gland itself, and lookt after the dietetic and hygienic conditions. In eighteen months there was almost a complete disappearance of the symptoms along with a regaining of lost flesh.

My experience shows me that as a rule we do not treat these cases long enuf. We become discouraged before we have gone far enuf. This case I am giving in particular to emfasize what I consider is almost criminal neglect on the part of medical men who hav thot it necessary to hav these cases operated on and hav never used these methods.

GONORREA

(*See Part One, Lecture XX*)

GRIP—INFLUENZA

(*See Part One, Lecture XXII*)

H

HABIT SPASM

(*See Corea*)

HART DISEASE

Hart diseases ar functional or organic.

Under the hed of *functional* hart diseases can be mentiond intermittent or irregular hart.

The treatment for functional hart disease is the treatment of the cause. If from overwork, hav the patient rest. If from some habit or occupation, hav it changed. H

Some cases of neurotic hart ar very much improved by the use of the pulsoidal current over the eyes and 2d and 3d cervical vretebræ.

The magnetic wave current as wel as the powerful radiant light therapy (incandescent and quartz) is unquestionably of much value in treating this condition.

The *organic* hart diseases ar endocarditis, pericarditis, myocarditis, fatty degeneration of the hart, hypertrofy of the hart, "leaky" hart, etc. Hydrocarditis often follows or is concomitant with scarlet fever, nefritis and ascites.

The etiological factor of most organic hart troubles ar alcohol, tobacco, syfilis, gonorrea, and drug poisoning.

Any factor that causes "reumatism" or reumatic symptoms or even malaria ar often etiological factors in causing organic hart diseases.

Corea is often concomitant with endocarditis.

Exanthematous fevers ar also etiological factors of hart disease.

Auto-intoxication, if carried far enuf, is also an etiological factor, but when auto-intoxication is severe enuf to cause endocarditis or other hart diseases, syfilis or gonorrea is usually the cause. The diagnosis of these conditions is quite easy if one uses a good stethoscope, and the best one that I know anything about is the Scott's Non-Roaring Stethoscope shown in Part One of this book.

In examining the hart, always examin when the patient is standing or sitting and also when they ar in a recumbent position.

Find out if possible the etiological feature and treat that.

All alcohol and nicotin in any form must be prohibited in treating hart disease, whether functional or organic. Often the use of tea, coffee, and chocolate has to be prohibited.

Iodin therapy is often indicated in treating these conditions.

For general treatment, the powerful radiant light therapy—incandescent and quartz—oxygen-vapor inhalation, B-D-C therapy and the magnetic wave current ar indicated.

H In many hart conditions rest in bed is imperativ, but with many conditions if the patient is careful not to over-exert themselvs, they wil liv to a "good old age" and die of some other condition.

HART BURN

(*See Gastric Diseases*)

HAY FEVER

(*See Eye, Ear, Nose and Throat*)

HEDAKE

First try to ascertain the cause and remove that.

Dietetic and hygienic mesures ar almost always sufficient to clear up the ordinary hedake.

Zone Therapy is probably the remedy par excellence for the ordinary hedakes.

Many times *eye strain* is the cause of hedake, and very often the way the patient lies in bed is the cause. Take away the pillow and hav the hed of the bed elevated from three to six inches. This many times wil cure hedakes that cannot be cured in any other way. The twisting of the neck on the pillow is often the cause of many exasperating hedakes. Putting the feet into hot water is also a very good procedure.

Relaxing the splancnic area by prolongd stimulation thru the 7th and 8th thoracic vertebræ is often very beneficial in curing hedakes.

Avoid hedake powders or pils.

HEMATOMATA

(*See Bruises and Hematomata*)

HEMOPTYSIS

Find the cause and treat that. (*See Tuberculosis*).

HEMORRAGE

Altho this really comes under the domain of surgery, there ar some forms of hemorrage that can be controld by the Quartz Light. In a "bleeder" the least abrasion wil start

a prolongd bleeding. This is very quickly controld by means of the *quartz light* thru a special quartz applicator. H

For *epistaxis,* lintine past thru the floor of the nose way back to the nasofarynx by means of a flat applicator (as described under zone therapy) is probably the best procedure.

HEMORROIDS

Electrical Treatment

As hemorroids ar caused by dilation of the hemorroidal veins, either singly or along with a relaxation of the rectal tissues, we must seek a means to contract these blood vessels, and at the same time giv tone to the musculature.

The method taut by Dr. Neiswanger is no doubt one of the best known. For this purpose I use a special copper electrode (Fig. 225) coverd with gauze, and over that perforated gold beater's skin. I keep this electrode in a bottle of 10% ichthyol and glycerin. This not only makes it steril but lubricates it. Connect this rectal electrode to the *positiv* pole, with the negativ pole connected to a clay abdominal pad. In inserting this electrode, be sure to do it carefully and push ahed of the electrode any of the prolapst membrane and carefully press the blood back thru the dilated veins. Ten to thirty milliampères can be used for from 8 to 10 minutes. These treatments can be repeated, as a rule, every second day, but sometimes not more than twice a week. Many times the treatment for hemorroids wil cure the constipation that generally goes with hemorroids.

We must remember that the rectum is a great reflex center and when using galvanism to this region we must bear in mind just what we want to do—whether to relax the tissues or contract them.

Sometimes the slow-sinusoidal or the pulsoidal current, thru my bi-polar electrode in the rectum, wil so strengthen the musculature of the vessels as to cure the hemorroids without any other treatment.

Positiv galvanism not only decreases the vascular supply to the dilated hemorroidal veins, but it produces sedation of the vaso-motor system. In so doing, it relieves pain and reduces inflammation.

Probably the *Sims position* is the best for giving this treatment, altho lying on the back wil anser very wel.

H Fig. 226 shows the Neiswanger copper electrode which he designd for hemorroidal treatment. The fault I find with it is that the end is so blunt that it produces a good deal of pain when inserting it thru the sfincter. What I consider an improvement on this style is shown in Fig. 225. It wil be notist that the new style has a conical shaped tip so that it wil enter the rectum without any trouble. Besides it has copper all the way up to the rubber ball.

Some claim that positiv galvanism about the sfincter wil dilate or relax the bladder and therefore they do not advize using the electrical current so near the external sfincter. From my experience in using both styles of electrodes, I cannot find that this theory is wel founded. However, it is very easy to put a piece of rubber tubing around this new style hemorroidal electrode, should the physician wish to insulate its stem.

The covering of either electrode should be practically the same. As before stated, I like the cotton gauze and the perforated gold beater's skin better than chamois or kid. Before deciding on which you would prefer, take two of these electrodes and cover one with chamois skin and the other with the gauze and the perforated gold beater's skin, and see which *you* would prefer, if *you* wer a patient. Most patients complain of pain when inserting a chamois-coverd electrode thru a sensitiv anus.

Another fault I hav to find with the electrode shown in Fig. 226 is that the cord tip has to go so near to the thighs that the patient is often burnd by it. With the new style electrode, the regular electrode handle can be used and thus prevent this annoying experience.

Do not use the puncture method nor the carbolic-acid-injection method to cure hemorroids. The danger from embolism is too great.

HERPES ZOSTER (SHINGLES)

There ar many ways of treating this neurotic condition, but nothing that I hav used can compare with the quartz light. Use it over the whole body as wel as locally.

Radiations from the powerful incandescent lamp ar very useful in treating this condition.

Iodex cum methyl salicylate (Iodex with artificial oil of wintergreen) is very useful as a local application.

Freezing the offending nerv seems to be an excellent method. Iodized flexible collodion painted on the affected area, is also good. Terpene peroxid in oliv oil is also very useful.

HIVES

(*See Urticaria*)

HOARSENESS

This is probably best treated by zone therapy as wel as by massage and powerful radiant light energy.

Throat gymnastics ar very useful.

HODGKIN'S DISEASE (SEUDOLEUKEMIA)

The term, Hodgkin's Disease, to many means any progressiv enlargement of the lymf nodes with progressiv anemia.

This disease is generally considerd to be incurable. I wil not go into any discussion of the disease as it can be found in the large standard textbooks, but I wish to say that all conditions where the lymfatic glands of the neck ar enlarged ar not Hodgkin's Disease. The condition may be caused by some other toxemia. I hav had cases suffering from nicotin poisoning that had this glandular enlargement which would entirely pass away when the nicotin was gotten out of the system.

Treatment—Dietetic Mesures

The treatment is to first put the patient on a twenty-four-hour fast, cleaning out the system wel by podofylin and saline laxativs. Then put them on the most restricted diet possible, for example, Horlick's Malted Milk and dry bred or preferably shredded wheat, one soft boild eg a day and spinach. If milk agrees, shredded wheat biscuit and milk can be used for at least a month, using about a pint of milk at each meal. Spinach, lettis, and celery should be freely given. Always use iodin therapy in this condition.

Fysical Mesures

Epsom salt baths ar to be recommended, using about ½ lb. commercial epsom salts to an ordinary bath tub of water.

H Powerful radiant light from the 3,000 candle-power lamp and the quartz light combined is the best treatment known. For the enlarged glands use pressure radiation thru a suitable quartz applicator. Ray gland by gland in this manner.

Follow this treatment with oxygen vapor and B-D-C therapy, using the screen that elicits the greatest reflex, which is generally the *A* or *C* screen. Sometimes the *D* screen and sometimes some other screen wil elicit the greatest reflex, depending upon the prevailing toxemia.

Electric light baths help to enhance elimination.

I hav ample evidence that the condition known as Hodgkin's Disease can be cured by these methods.

Clinical Case Hodgkins' Disease

Case 296

Male, aged 55. Married. Gave an MM VR indicating a profound nicotin intoxication. Blood pressure 175. Pinpoint pupils, exofthalmos, dragging gait, worried look, rosacea, rinofyma, hypertrofy of the lymfatic glands about the neck, neck quite rigid, enlarged lymfatic glands could be palpated thruout the abdomen, some visible nodular swellings thruout the abdomen. Patient complaind of profound weakness. Said he had not been able to sleep without some powerful narcotic given to him by physicians for the past nine months. Said if he went without the narcotic he did not sleep and he was so nervous that it seemd as tho he would go insane.

I askt him how much tobacco he was using and he said a few cigars every day. I told him his profound toxemia would not come from "a few," but that there must be some other cause for the deep-seated toxemia. He then said that up to about a year ago he chewd on an average of five pounds of tobacco a month and had been doing so for thirty years. Besides that he smoked whenever he did not hav a plug in his mouth.

My diagnosis was Hodgkins' Disease caused by nicotin intoxication. The patient did not give any B-D-C reaction for tuberculosis nor for syfilis. He said that about a year ago he lost within a few weeks over 50 pounds in weight.

Nine months before I saw him his blood examination showd

Erythrocytes per cu. mm	4,000,000
Leucocytes per cu. mm	7,400
Color index	.88

When he came to me I had a blood count made, which showd

Erythrocytes per cu. mm	3,450,000
Leucocytes per cu. mm	7,400
Color index	1.11
Small mononuclear lymfocytes	2%
Large mononuclear lymfocytes	78%

I put the patient on a fast for about 48 hours, telling him to drink quantities of water. I prescribed one grain podofyllin in divided doses of 1/6 grain every half hour the first evening, to be followd the next day by large doses of epsom salts and all the water he could possibly drink.

I told him he must not touch tobacco in any form again. Neither must he touch any alcoholic beverages, and after the first two days he must eat nothing but one slice of bred and a pint of milk three times a day.

Forty-eight hours after the beginning of his fast, I began treating him, giving first radiations from the 3,000-candle-power lamp over the neck and face for nearly an hour. I followd this with a two-minute exposure from the quartz light and then gave oxygen vapor and B-D-C treatment for 20 minutes.

The next day I gave him the same treatment. A very profound erythema took place. Small blisters came on his body from the nees up to his neck and on his face. The erythema was out of all proportion to the exposure, and I concluded that the profuse miliary blisters wer caused by the rapid elimination of the poison in the system. I coverd his body with oliv oil and told him to do the same once or twice a day.

The only internal medication that I gave him was iodin therapy, reaching a maximum of 20 drops three times daily, and some simple remedy for keeping the bowels open.

Treatments wer given daily except Sundays. After the first week I gave him a fairly liberal diet but without sugar as his urin showd sugar by the fermentation test. I prohibited the use of any form of narcotic, and from the very first

H treatment he slept better than he had for a year even while using some powerful narcotic such as opium or veronal. From the first day he said he had absolutely no craving for tobacco. After one week's treatment he said the thot of tobacco was repugnant to him. After the tenth treatment he told me he felt that he was getting wel and that he had not felt so wel before in a whole year.

The enlarged lymfatic glands about his neck and other parts of the body I began treating after the first week by *compression radiations* from the Kromayer lamp, making the exposures from 10 to 20 minutes, depending upon the size of the gland and its induration. I did this without a filter. After each such radiation I coverd the glands with carbenzol and a little cotton gauze and adhesiv plaster.

Within one month his face had changed entirely in appearance. The nodular swellings on the nose had gone down, new skin had come on the body from the nees up, the nodular swelling in the abdomen had entirely disappeard, the enlarged glands in the neck had disappeard, and the man told me he felt perfectly wel and that he slept better than he had for years, and was beginning to feel so strong and happy that he wanted to start a "war garden."

One month after the first treatment his blood examination showd

Erythrocytes per cu. mm.	4,400,000
Leucocytes per cu. mm.	5,700
Color index	.91
Small mononuclear lymfocytes	12%
Large mononuclear lymfocytes	26%

Nothing about his blood was very much abnormal except the lymfocytes. His urin showd only a slight trace of sugar, and to all appearances he is a wel man altho I shal not discharge him as cured for at least two or three months.

I hav lernd that the physician who treated this patient for nine months previous to his coming to me had given him intravenous and intramuscular medication, arsenic preparations in massiv doses, and in fact had used every so-cald "regular method" of treatment, including high frequency currents, until the man's skin was badly irritated. When I first saw him his buttocks wer so sore from the intramuscular injections that he could hardly sit down.

The physician who had treated him is of the "regular" scool and, as far as reputation goes, stands as wel as any "in

the society." I mention this to impress my readers with the fact that the very best so-cald "orthodox treatment" in this case was an utter failure, as the patient was going down hil just as fast as he could go.

I hav receivd reports from some of my pupils who ar treating Hodgkins' disease, following out the abov methods (which I believ ar original with me) and they ar reporting equally as good results as I am getting.

I do not think that any one of the modalities that I use for this disease would bring about the results individually, but it is the combination—*condenst out-of-doors therapy*—that produces the results, as I hav had similar cases in years gone by and I faild to effect a semblance of a cure.

As such cases as the abov ar usually clast as "incurable," I hav given in detail the conditions and treatment. As the case lookt so bad, I had another physician see him at first and later, so if any one doubts the report, "I am redy with the goods."

HYDRO-PERICARDITIS

(See Hart Disease)

HYMEN, TUF OR CONTRACTED

I believe it is the duty of every physician to try to educate the mothers of dauters, who hav any neurotic symptoms or who hav any functional pelvic disorder, to hav the *hymen fully ruptured.* The hymen is only a remnant in evolution and means absolutely nothing. In examining hundreds of young girls I have found at least 50% without any perceptible hymen. Some I find with a hymen so tuf and contracted that it makes the girl miserable and self-conscious all the time. Many times masturbation is brot about by the reflex irritation caused by this unyielding, contracted hymen.

Many mothers think they ar teaching their dauters chastity by telling them that there is a "closed door to the vagina" which should never be opend until marriage. Other mothers wrongly teach their dauters that their husbands wil think they hav been "immoral" if the hymen is ruptured. This is trying to teach chastity by fear rather than from higher motivs. This method of drilling chastity into a child belongs to the dark ages. It is teaching the dauter that she

H is inferior to the man and is subservient to him. This irrational custom of wrongly instructing girls about the opening to the vagina dates back to the dark ages when the vulva was sewd up in babyhood and opend by a priest just before marriage.

I hav had neurotic girls come to me and ask how they could avoid letting their future husband know that the opening to their vagina was not closed. They had discoverd by personal manipulation that there was no hymen and it had preyd upon their minds.

I believe that all girl babies should have the hymen fully ruptured before they ar two years old, and that the hymen subject should never be mentioned to them except as an anatomical fact.

Why in the name of common sense should there be an impression engraved upon the girl that she is subservient to the man in sexual matters? Why should she be taut that there is no way of proving the "chastity" of a man, but there is one for proving the "chastity" of the girl? It is the duty of every physician to instruct the mother on these subjects.

Many a separation a day or two after marriage has been caused by the ignorance and superstition bred in the girl and incidentally told to the young man by low-minded men. Sometimes the hymen is so tuf that it wil not rupture without a surgical operation. Rather than hav this done the young bride leaves her husband in disgust and never returns. In other cases where there is no hymen or where it has been ruptured in childhood, the husband accuses the young wife of having been unchaste and she indignantly spurns him and a separation follows. These details ar not printed in the newspapers, but from my experience in dealing with all classes of people I can truthfully say that a good share of the "incompatibility" between husband and wife is caused by a wrong understanding regarding marital relations, especially as regards the anatomical condition of the female as wel as the male.

I hav often seen hymens that wer not ruptured until the first child was born. I hav also seen a hymen so inelastic that the index finger could not be inserted thru it, and yet the woman had been married over twenty years.

An unruptured hymen is no more a sign of "chastity" than an elongated foreskin on a male is a sign of "chastity."

HYPOCONDRIA

H

(*See Splanchic Neurasthenia*)

HYSTERIA

DIAGNOSTIC MANEUVER

I do not know who discoverd the following maneuver for hysteria. I red it in some Journal and began to test it out, and found it to be very reliable.

I use an applicator, either wood or metal, and press upon one side of the hard palate and then on the other. If one side shows a reflex and the other does not, nine times out of ten it indicates hysteria.

TREATMENT

The treatment of hysteria is mainly to eliminate irritating influences and to use suggestion.

Along with this use the powerful incandescent lamp in conjunction with the quartz light, and B-D-C therapy.

INANITION

I

As inanition is a state of exhaustion resulting from insufficient body nourishment, the treatment must be similar to that for tuberculosis or anemia. Carefully regulated dietetic and hygienic mesures ar of the utmost importance.

Powerful radiant light energy—incandescent and quartz light—along with oxygen-vapor inhalation and B-D-C therapy ar the rational procedures.

INDIGESTION

(*See Gastric Diseases*)

INDIGESTION, INTESTINAL

(See Intestins)

INFANTILE PARALYSIS

(*See Paralysis, Infantile*)

INFLUENZA

(*See Grip, Part One, Lecture XXII*)

INSOMNIA

Many persons who ar afflicted with insomnia can be greatly benefited by sleeping with their heds to the north or south. One with a high blood-pressure should sleep with

the body at right angles to the magnetic meridian—east or west.

In some instances I find the condition of the patient is greatly benefited if a small wire (copper preferd) is placed under the lower sheet *crosswise* of the bed, and this wire carried to a water, gas, or some pipe so as to ground it. This grounds the patient and does produce effects that ar remarkable.

Having the patient grounded while sleeping parallel to the magnetic meridian, deservs careful attention. There is surely something to it more than suggestion.

Another method of treating insomnia is to hav a wakeful patient get up, take all the clothes off the bed, make it up again, and put the hed where the feet wer—reverse direction. This procedure alone has cured many of insomnia.

Another very simple method which works very wel indeed with many sleepless people is to comb the anterior parts of their legs and body with a metal comb or metal hair brush, stroking from the feet upward. This combing of the skin can be done until the skin is all aglow. This really comes under the hed of Zone Therapy. Many persons suffering with insomnia keep an aluminum comb under their pillow for this purpose. Combing the anterior part of the arms wil produce the same effect.

These ar very simple and natural methods for treating insomnia. Some hav very good success by having the patient eat a piece of dry bred, the theory being that the blood is cald away from the brain and thereby sleep is induced.

I cannot say too much against the drug treatment for insomnia. It produces no lasting good results but on the contrary produces a habit that leads to very dire consequences. The majority of dope fiends wer made so by following out the physician's advice.

Modern thot is tending toward simplicity and natural methods in the treating of disease, and it is the duty of the physician to instruct his patients how to follow out simple and natural methods.

Generally speaking, in all cases of insomnia carefully regulate the patient's habits, choose a diet that is simple, nutritious, and non-stimulating. The sleeping room should be wel ventilated. If we bear in mind that insomnia is not a disease but merely a symptom, we wil be better prepared to look for the underlying cause.

Neurosis of the Intestins

This is a form of peristaltic unrest. The patient complains of diarrea, enterospasm, and many other peculiar sensations. At times they complain of intestinal neuralgia. Most of these cases hav mucous colitis and complain of colic. Many such cases ar operated on for appendicitis.

All such cases should be thoroly examind thru the sigmoidoscope and treated according to findings.

The pulsoidal current thru my bi-polar rectal electrode is of great benefit in these conditions. The single pole electrode thru the rectum and the weighted clay pad on the abdomen ar also very beneficial.

Powerful radiant light energy—incandescent and quartz light—is of great benefit in this condition. It often effects a cure.

In all such cases regulate the diet and keep the bowels wel open. Intestinal antiseptics ar indicated.

Intestinal Indigestion

The symptoms of this condition ar bloating, borborygmus, cramps, and a constant consciousness of the intestins.

Treatment

In the first place put the patient on a fast of from 24 to 48 hours. Cut out all food except milk and proteids. Gradually allow carbohydrates that hav been thoroly dextrinized until the condition becomes normal or normal enuf to hav a partial non-restricted diet. As a rule, such patients ar never able to eat everything and should understand it.

Many of these conditions ar caused by a mal-condition of the gall bladder. The best remedy for this condition, outside of dietetics and deep abdominal breathing, is the powerful radiant light energy—incandescent light and quartz light in combination. It wil do more for this condition than anything else that I hav ever tried. If there is any beginning ulceration that is hidden, the light helps to remedy it. Taking everything into consideration, radiant light energy is the sheet ancor in treating intestinal diseases.

Intestinal Sand

I hav had some patients find sand in their feces, especially when they had diarrea, and they wer very much wor-

ried about it. Many microscopical tests hav been made for such neurotic people. As much as a dram of this *sable intestinale* is often found. I red of one case that past as much as two ounces of this sand a day.

Mucous colitis is generally concomitant with such a condition. Often there is some blood in the stools.

The composition of true intestinal sand is

Water	15%
Inorganic matter	51%
Organic matter	34%

The residue shows salts of magnesium and calcium, fosforus, iron and urobilin. Calcium fosfate is one of the chief constituents, being about 90% of the total solids.

So far the origin of this sand has not been satisfactorily determind. It seems to be analagous to gravel past in urin. This intestinal sand has been studied by many microscopists, and all sorts of conclusions hav been formulated. The beautiful color pigment that is seen thru the microscope is made by urobilin and bile pigments. Colestrin has been thot by some to be present, but so far as I can ascertain, it is not.

I hav examind a quantity of this sand, but hav never been able to find colestrin in it. Therefore it is not of biliary origin. It dissolvs in dilute hydrocloric acid, leaving an organic residue in which many bacteria ar found.

Vegetable debris is often thot to be intestinal sand, but it is not as can be redily demonstrated by the microscope. Such debris shows woody cels insted of crystals of irregular shape.

Sometimes this intestinal sand agglutinates and forms a mass as large as a small hazelnut. These stones ar generally composed of a calcium carbonate and fosfate of magnesium with iron and organic matter.

Sometimes this intestinal sand seems to be caused by ingestion of magnesium salts. Some think that it is formd in the upper region of the colon because of the urobilin that is present.

I had one patient suffering with cancer of the pancreas who past quantities of this intestinal sand every day.

For a microscopical specimen to show beautiful pigments, probably nothing is more beautiful than this intestinal sand.

Treatment

The treatment for intestinal sand is the same as for mucous colitis. Flushing of the intestins, suitable diet, and the pulsoidal current thru the rectum should be carried out. Probably the most radical treatment and the best of all is local treatment thru the sigmoidoscope. This is taken up in the lecture on "The Colon."

IRITIS

(*See Eye*)

IRRITANTS

(*See Counterirritants*)

ITCH

Find out what causes the itch and treat that. For any local itching irritation, the quartz light is practically specific. As a rule the effectivness of the quartz light is enhanst by concomitant use of the powerful incandescent light.

IVY OR RUS TOX. POISONING

The quartz light is probably the very best remedy for this as wel as for poisoning from other vines or trees.

Some claim that an ice-cold saturated solution of sodium bicarbonate, if kept constantly applied to the poisond part, is a very efficacious remedy.

It is generally known that a solution of led acetate is very effectual in treating ivy poisoning, but it is not safe to use on children as it is a poison.

The quartz light, especially in combination with the powerful incandescent light, is nearly "specific."

JAUNDIS

(*See Part One, Lecture XXII*)

KELOID

According as to whether the origin of the keloid is from scars or normal skin, they ar cald *true* or *false* keloids. The treatment for both conditions is the same. Nearly every authority on the subject puts down the prognosis as "un-

K favorable," as recurrences ar almost always liable to follow operativ removal, and operativ removal seems to be the only method heretofore publisht.

Many hav used injections of thiosinamin or 10% thiosinamin plasters or thiosinamin used cataforically, but all of these treatments avail very little.

The treatment that has proved to be what might be cald specific is *radiation from the quartz, mercury-vapor lamp.* To giv the reader some idea of the tecnic, I should like to mention one particular case.

Case 295

This keloid was 4 millimeters deep, fully 8 millimeters wide, and at least 50 millimeters long. It had its origin from a scar on the rist. The first treatment was given thru the Kromayer lamp—compression radiation 8 minutes. Within five days the second treatment was given, but the duration of treatment was 10 minutes. The second day following the second treatment there was a good, ful blister, which entirely disappeard within two weeks. Two months after this second treatment (which was the last treatment) the keloid growth had entirely disappeard and only the tand scar of the original injury is now to be seen.

I believe there is no other modality that is of any special use in treating keloid except the *Quartz Light.*

KIDNEY DISEASES

In all these conditions, the *patient* rather than the disease per se, should be treated. For a specific treatment, fresh air, deep breathing, and the use of the 3,000-candle-power lamp and the quartz lamp along with oxygen-vapor inhalation and B-D-C therapy, wil do more to aid your patient than any other mesures.

I know that stimulation over the indicated area of the spine is a great aid to other mesures. For these areas consult "Key to Spinal Stimulation."

Clinical Case—Bright's Disease

To verify the many reports receivd from my pupils regarding the "cure" of Bright's disease, or what in this case might be better termd cronic nefritis, by means of oxygen-vapor and B-D-C therapy, I made the following test:

Case 287

Mrs. G., 68 years of age. *True* albuminuria and granular casts. Was referd to me for treatment for some other condition. I discoverd the kidney lesion and began treating her with oxygen-vapor and B-D-C therapy. I put her upon a strict vegetable diet and two egs a day, if desired. Cut out all tea, coffee and cocoa. Gave oxygen-vapor and B-D-C therapy 40 minutes daily.

After six weeks of this treatment there was no sign of casts or albumen in the urin. In making these tests I use the most modern laboratory methods.

I cannot believe that the case is *cured* so far as making good the destroyd tubules, but as the patient's general helth is greatly improved, this method of treatment is worthy of your consideration.

KNEES, PAINFUL

(*See Nees*)

LARYNGITIS

(*See Sore Throat*)

LEPROSY

Altho very few of my readers wil hav occasion to treat this disease, yet I might say the best fysical treatment that I can lern anything about is the quartz light.

LEUKEMIA (SEUDO)

(*See Hodgkin's Disease*)

LEUKORREA

As leukorrea is a *symptom* rather than a disease, treat the predisposing cause.

An antiseptic vaginal douche made by mixing a teaspoonful of common salt and a teaspoonful of borax to the pint of hot water is a very effectual clensing agent. If an astringent effect is desired, a half-teaspoonful of powderd alum can be added to this mixture.

Another very excellent antiseptic vaginal wash is the *vaginal antiseptic powder* put out by the Abbott Laboratories.

A very effectiv douche water is made by adding 1 part of *official lactic acid* to 200 parts of water. In treating a young girl for leukorrea with this lactic acid solution, 1 part of lactic acid to 500 parts of water is probably best to begin with. For a very stubborn condition, one can use as high as 1 part of lactic acid to 100 parts of water.

The solution should be as hot as the patient can bear it, and the special vaginal syringe shown in Fig. 400 should be used.

Lactic acid has the power of destroying nearly all kinds of micro-organisms that ar ever found in the vagina. Many times *sterility* is caused by an acid secretion from the vagina.

Sitz baths, using the water as hot as can be borne, is also very beneficial.

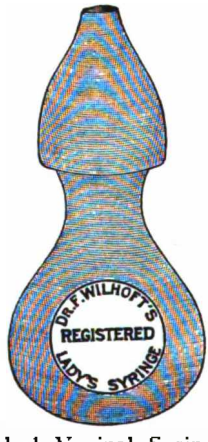


Fig. 400. Showing an ideal Vaginal Syringe made of soft rubber by Goodyear Rubber Co., New York City.

Iodex suppositories ar often very beneficial in treating any case of leukorrea.

Medicated tampons ar often indicated in treating leukorrea. Probably the finest form of medicated tampon to be had is that known as the "Pon Tampon" manufactured by the Pond Mfg. Co., Rutland, Vt. These ar elegantly made and contain various medicaments.

Powerful incandescent light over the abdomen, as wel as lumbar and sacral region, is a very valuable procedure in treating leukorrea. The combined light therapy—incandescent and quartz—is also very beneficial.

The *Quartz Light* applied thru a suitable speculum and directed by means of a special quartz applicator, is considerd by many to be one of the best methods for treating leukorrea, owing to its powerful germicidal effect.

Positiv galvanism, using the copper electrode shown in Fig. 231 and carrying out the tecnic described under "Dysmenorrea" is very efficient.

In every case of leukorrea the *sfincter* about the vagina —hymen included—should be wel dilated.

The rectum should also receive a careful examination. Often the *sigmoid* is the seat of the cause of leukorrea.

LITHEMIA

(*See Gout*)

LIVER, DISEASES OF

In all diseases of the liver, regulate the diet and use powerful radiant light—incandescent and quartz light. This modality has a selectiv action upon all the digestiv processes and it can be relied upon.

(*See Jaundis.*)

LIVER INTOXICATIONS

(*See Jaundis and Bilious Attacks*)

LUPUS ERYTHEMATOSUS

(*See Skin Diseases*)

LYMFADENITIS

As involvment of lymfatic glands is usually due to infectious material, our first thot must be to enhance elimination and reduce toxemia. This is best done by powerful radiant light—the incandescent light and quartz light combined. Electric light baths ar also to be recommended.

As the adentitis is usually caused by tuberculosis or syfilis, the B-D-C treatment must be according to the etiology.

Iodin therapy should never be forgotten.

For the inflamd glands, nothing can compare with the quartz light. Use quartz applicators where practicable.

Often the compression radiation is required over the enlarged glands.

L LYMFANGITIS

As the cause for Lymfangitis is the same as for Lymfadenitis, the treatment is about the same. Powerful radiant light energy thru the powerful incandescent lamp and the quartz light ar the mainstays. Follow this by B-D-C therapy.

In all diseases of the lymfatic system, no method, fysical or otherwise, can compare with powerful radiant light energy.

Regulate the diet to reduce toxemia as much as possible.

Employ iodin therapy.

M MADURA FOOT

This disease is caused by an infection with the fungus streptothrix maduræ or actinomyces maduræ, which organism resembles very much the actinomyces fungus. If this condition is seen when the inflammatory swelling first begins on the sole of the foot, powerful radiations from the quartz light wil cure it.

MALARIA

(*See Part One, Lecture XXII*)

MEASLS (MORBILLI)

Hydrotherapy in the form of hot eucalyptus water packs is no doubt the best treatment for measls. An ordinary case of measls treated in this manner wil hav none of the unfortunate sequellæ which so often follow the so-cald "allopathic" treatment for measls.

For the internal medication no doubt the *homeopathic* remedies ar the best. This has been demonstrated so often that it removes any change for controversy.

Some advocate the use of cold water packs for this condition but I cannot condem it enuf. Kidney lesions ar very prone to follow in the wake of cold water treatment for measls. Some recommend hot water baths. If this method could be carried out in a room fitted for Turkish baths, it might be very efficient, but the ordinary house is not so equipt. Therefore hot packs, wringing the blankets out of hot eucalyptus water, is the best all-round treatment.

The proportion of oil to water for this pack is a teaspoonful of oil eucalyptus to the quart of water. The regular commercial, California oil of eucalyptus is just as good for this work as the more refined, imported product.

Fresh air is essential in the treatment of measls. Keep the bowels open, and abov all things, *protect the eyes from light.* Do not let the patient go out in the bright light without wearing dark glasses for at least three or four weeks after the attack of measls is supposed to be entirely wel. Many cases of weak eyes and impaird eyesight ar caused by neglect in this particular. No matter whether the patient says the light hurts the eyes or not, protect them with dark glasses. To prevent the contagion of measls in a house, hang sheets wet with a 5% solution of formaldehyde about the doors communicating to other rooms.

As a preventiv mesure, it is wel to hav all the other members of the household spray the nose wel with menthol hydro-carbon oil. The best nebulizing or atomizing oil for this purpose is that mentiond under Mouth, Teeth and Gums. It is also wel to hav others in the family gargle the throat wel several times a day with hydrogen peroxid and water in the proportion of half a teaspoonful of the hydrogen peroxid to a tablespoonful of water.

As auxiliaries in preventing contagion in measls or any other infectious disease, keeping the bowels open and eating plenty of onions (prepared in any way that makes them easily digested), ar very effectiv.

During convalescence, the electric light baths and radiations from the powerful incandescent lamp and quartz light ar always to be used if possible. Oxygen-vapor inhalations aid wonderfully during convalescence.

Calcium sulfid is indicated in all infectious diseases.

MEASLS (RUBEOLA)

The handling of Rubeola should be the same as for handling Morbilli, even tho Rubeola is considerd by many to be a very light form of Morbilli.

MELANCOLIA

This condition is often best treated by change of scene, but as that cannot always be accomplisht, *suggestion* must play a large part.

Abov all things, increase elimination and righten metabolism. For this I know of nothing better than powerful radiant light energy—the incandescent light and the quartz light—and B-D-C therapy.

Chromo-therapy is often very useful in treating melancolia.

MENORRAGIA

For menorragia or abnormally profuse menstruation I use the constant, positiv current, with the copper electrode encased in cotton and perforated gold beater's skin. I employ from 30 to 60 milliampères of current for about 5 minutes, then the same current interrupted for about 3 minutes, and close the treatment with about 2 minutes of the slow-sine-wave current.

Stimulation of the 2d lumbar vertebra is indicated.

MENSTRUATION, IRREGULAR

Irregular Menstruation is treated in the same manner as Retroversion. (*See Retroversion.*)

METRORRAGIA

Metrorragia, or intermenstrual bleeding, I treat according to the underlying cause. Many times the copper-sulfate-cataforic treatment, mentiond for menorragia wil cure metrorragia, and in other instances the treatment outlined for retroversion wil relieve this condition.

Galvanism wil increase the menstrual flow if the vaginal electrode is attacht to the negativ pole; while it wil decrease it if the vaginal electrode is attacht to the positiv pole. The reason for this is plain—negativ galvanism relaxes the blood vessels, while positiv galvanism contracts them.

Spinal stimulation, at the indicated area, is often helpful for this condition.

MIGRAINE

Fysical therapy offers great reward in the treatment of migraine. In the first place, restrict the diet. You might just as wel try to dry sand with water pouring over it as to cure migraine without regulating the diet.

Put the patient on a fast for from 24 to 48 hours. Then put them on a diet of bred and milk or Horlick's Malted Milk and shredded wheat biscuit, spinach, celery, and lettis. M

Sometimes suitable gastric sedativs ar indicated, but generally they ar not. Sodoxylin (Abbott), taken before each meal—a teaspoonful dry on the tung and washt down with water—has a remarkable value. (Sometimes the Sodoxylin has a better effect if taken *after* the meals.)

Powerful radiant light energy over the body from the middle of the thighs up is our great fysical mesure for this condition. Use the combined light treatment—radiations from the powerful incandescent lamp and the quartz lamp.

Keep the bowels wel regulated by exercizes, diet, etc.

Gonorreal infection is very often the cause of migraine altho it is seldom so diagnosed. From the B-D-C method of diagnosis and subsequent histories and the results of anti-gonorreal treatment, I know I am correct in making this statement. Many women having migraine hav gonorreal intoxication contracted from their husbands. By getting a careful history one wil find that a year or two after marriage the wife had more leukorrea than common, that she had burning, bearing down pains in the pelvic region, that she has had operations for pus tubes or diseasd ovaries, that she is steril, etc.

The indicated B-D-C therapy is a great aid in treating migraine.

MOLLUSCUM CONTAGIOSUM

(*See Skin Diseases*)

MOUTH, TEETH, AND GUMS—CARE OF

Every physician is supposed to understand how to take care of the mouth, teeth, and gums of his patients, but the work is too often turnd over to a dentist who may or may not be qualified to do this work.

An antiseptic wash for the mouth and throat must be used with an understanding of what it is used for. For a person in helth, a dilute hydrogen peroxid wash is very good. This is made by putting about a teaspoonful of good hydrogen peroxid in a half glass of water. The hydrogen peroxid gargle and wash should be followd by some saline wash which removes the little bubbles caused by the hydro-

M gen peroxid. This saline wash can be plain sodium bicarbonate, one-quarter teaspoonful to the glass of water; or it can be a normal salt solution, that is, about one-quarter teaspoonful salt to the half-glass of water.

A saturated solution of boracic acid is also very efficient as a mouth wash and gargle. I always advize the patient to have enuf acid in the water to leave quite a good deal in the bottom of the bottle, and to shake it up before using. This allows some of the crystals of the boracic acid to adhere to the membranes.

The teeth should be cleansd at least twice a day with a good brush. No matter what kind of tooth powder is used, I think it should be followd by washing the teeth with an acid solution. Diluted vinegar (half vinegar to half water) can be used, or half a teaspoonful of acetic acid to the glass of water. Rubbing the teeth with the inside of a lemon peel or with lemon juice is also beneficial. This does not seem to be generally known, but the acid rubd on the gums and teeth is better than anything else for removing the adherent film. Some widely advertized pastes pretend to hav "pepsin" for "digesting" this film. The acid they contain along with their gritty contents does the "digesting."

The acid wash should be used once daily.

A very good mouth wash and gargle is made by mixing the following:

Boracic Acid	2 gms
Clorate of Potassium	5 gms
Peppermint water	200 mils

Another is

Sodium clorid	2 gms
Borax	2 gms
Glycerin	50 mils
Wintergreen or Peppermint water	200 mils

Another is diluted alcohol—one part of alcohol to four or five parts of water.

Alcohol has an astringent and antiseptic effect as wel as being cleansing.

Every patient using a gargle should be instructed to not swallow it, especially if it contains potassium clorate or alcohol.

GARGLE FOR ADULTS

Ethyl Alcohol	60	mils
Cinnamon Water	60	mils
Formaldehyde 40%	0.25	mils
Glycerin	20	mils
Distild Water q.s. ad	250	mils

TO STRENGTHEN THE GUMS

Tincture of Capsicum	8	mils
Tincture of Myr	8	mils
Ethyl Alcohol	90	mils

Sig.—Put two or three drops on the finger and rub vigorously over the upper and lower gums.

Caution: In using hydrogen peroxid for a gargle, one must bear in mind that if there ar pus pockets in the tonsils, they must be opend before using the hydrogen peroxid wash. Otherwise the distension of the pocket, by the gas, is liable to make the condition worse.

In fever conditions, or where the mouth is in bad condition from diseases of the digestiv tract, I find unsweetend juices from the acid fruits, such as lemons, limes, grapefruit, and sometimes pineapple, ar very efficient as a gargle and mouth wash. Probably lemon juice or the juice of limes is better than any other.

PYORREA AVEOLARIS

Pyorrea Aveolaris or what perhaps is better named Cronic Alveolar Osteomyelitis (Rigg's Disease) is probably more prevalent than anyone has any idea of. Some claim 90% of all persons past forty years of age hav it. When this condition is suspected, the dentist should not only clean tartar off the visible portion of the teeth, but he should go below the surface of the gum. As a rule, there ar aveolar pus pockets causing this condition.

Altho the endameba buccalis is by some considerd to be the cause of pyorrea aveolaris, yet there is no doubt that many cases occur in which the endameba buccalis does not play a part.

The treatment par excellence for this condition is quartz light directed over the infected areas and, if possible, pressure radiations should be employd.

M The use of emetin and other forms of ipecac is wel known, but they ar not as specific as some would lead us to believe.

I find cleaning the teeth with an iodin preparation is very efficient in this trouble. As a tooth wash I would recommend a solution of

Iodin crystals	1 gm
Potassium iodid	3 gms
Glycerin	30 mils

This iodin solution can be used once or twice a day, while an acid solution should be used every morning. Remember one of the best remedies for pyorrea aveolaris is iodin in some form. Painting the affected area, after it is thoroly cleansd, with a 50% tincture of iodin (keeping it away from any other part of the mouth by cotton pledgets) is no doubt very efficient. The iodin-glycerin solution abov cited can be used in lieu of iodin tincture. (Soluble Iodin "Keysall" is very good.)

Liquid Iodex (Liq. iodi M. & J.) is a stable preparation of iodin (2½%) for aural, faryngeal, and many other uses. This is a soluble, stainless preparation of iodin and can be used to great advantage for pyorrea alveolaris. The tecnic for using it is to first see that the teeth ar wel cleand by a competent dentist. Then every day use this *liquid iodex* on the gums, preferably between the gums and the teeth. This can be done by rubbing the preparation in wel with the finger or by using a small wooden applicator to push it down around the necks of the teeth. Many cases of pyorrea alveolaris hav been apparently cured by this simple procedure.

Nascent Iodin formd right on the teeth or in the gums or pus pockets is good. For this I use a 15% solution of potassium iodid, using a wooden applicator to work it down wel around the gums and below the crown of the tooth. I then force into all these places pure ozone. This, as alredy explaind, produces nascent iodin, and that wil destroy any micro-organisms and seems to be especially beneficial in this condition.

If you hav not an apparatus for driving ozone under pressure, the regular ozone generator previously described wil do fairly wel, provided one is very particular to push the gums down with a wooden applicator while applying it.

Another very simple and effectiv means of treating pyorrea aveolaris is by means of coal oil, or kerosene oil. The formula I use is to ad *twenty drops oil of verbena to one ounce of ordinary kerosene.* This should be painted with a swab over the tooth and workt wel around the neck of the tooth. This wil kil the endameba buccalis as wel as acting as a stimulant to the affected area. The oil of verbena disguises the taste of the kerosene to a great extent. One or two drops of oil of cloves to the ounce of kerosene disguises the taste quite sufficiently. This kerosene preparation can be used thru an atomizer so arranged as to drive the oil wel down around the gums.

Use a cotton applicator to dry the moisture about the treated teeth, before applying the coal oil mixture.

Whenever a person is inclined to hav pyorrea aveolaris, it must be rememberd that it wil recur. Therefore some preventiv treatment should be instituted, such as cleaning the teeth as previously described or applying kerosene oil mixture or some iodin preparation at least once a week.

The *teeth* should always be examind when there ar any symptoms that ar not redily cleard up. The general practis seems to be to look for pyorrea alveolaris and if that is not discoverd no further examination of the teeth is made.

The FitzGerald cautery test, which is explaind under Zone Therapy is probably one of the best methods of testing the teeth. That test wil locate tofi, sensitiv nervs encroacht upon by fillings, pus pockets, etc. If pain is produced by attacking the filling, large or small, with a cautery, it proves that that filling is too near the nerv or is causing some irritation of the nerv and should be removed and the nerv treated.

The x-ray wil often show a diseased condition about the teeth, but sometimes it wil not show it at all. Only an experienst operator can be relied upon for x-ray examination and interpretation about the teeth and often he too wil be deceivd owing to peculiar shadows causd by varying densities of tissue.

Many painful conditions about the face and other parts of the hed ar caused by diseasd conditions about the teeth. Hav the teeth preservd if possible. To advocate the wholesale drawing of teeth whether they ar diseasd or not

M on the supposition that the general condition of the patient wil be better, is what I consider malpractis.

I recently examind a man about fifty years of age for pains in the joints. I found that he did not hav a natural tooth but was wearing an upper and a lower plate. I askt him how long he had been without teeth and he said about five years. I askt him why they wer drawn and he said some doctor had told him that his joint pains wer caused by some trouble about the teeth and advized that they be puld. After they wer puld the teeth wer examind and not one tooth was found diseasd at the root. Insted of the man's symptoms being ameliorated, they wer increast—probably due to improper mastication with the false teeth.

This man gave a *D*-MM VR, and a prostatic examination proved that gonorreal infection was the cause of the trouble, altho he was supposed to hav been cured of his "first and only attack" thirty years before.

I mention this case here rather than under the hed of gonorrea to emfasize the fact that not every pain nor disease begins with the teeth, and that common sense rather than fads should guide us in giving advice to our patients.

Lingual Titillation

I wish to cite a very peculiar case of a man suffering from intolerable itching of the lower right half of the tung. Along with this itching was a feeling which he described as of "worms crawling in the muscle."

Upon examination I discoverd two small pimples or boils in the upper part of the pinna. These I treated with the radiations from the powerful incandescent lamp and terpene peroxid applied locally. I gave these treatments three days in succession.

At the same time I examind the mouth to see if the teeth wer alright. I found a gold crown on the first lower molar on the right side that was prest down into the gum and causing irritation. I had a dentist remove it and painted the gum with tincture of iodin. When the ear was wel, the tung was wel, and the gum was wel at the same time.

I mention this case in particular to show how reflexes wil affect the tung and to show how important it is that the teeth be examind, especially where there ar any peculiar symptoms about the face or mouth.

I am inclined to believe the infection about this crown in the lower jaw had something to do with the ear trouble as wel as with the tung. Whether the reflex from the ear caused the sensation in the tung, I do not know, but I do know that congestion in the middle ear wil cause all sorts of sensations in the tung, not only of feeling but of taste.

MUMPS (CONTAGIOUS PAROTIDITIS)

Mumps being an acute febril disease is not met very often by those doing offis practis, but every fysical therapeutist should know how to treat them.

Fysical therapy is without doubt the only successful therapy for the treatment of mumps. The chief lesion in mumps is a hyperemia and edema of one or both of the parotid glands which occasionally extends to the sub-maxillary and sub-lingual glands.

The effects of powerful radiant light and heat in such conditions immediately attract our attention. No doubt radiations from the powerful incandescent lamp and the quartz lamp wil do more to relieve the inflammatory condition in mumps than any other modalities. If the case is so situated that the 2,000 or 3,000 candle-power lamp cannot be used, the smaller lamps ar of great servis and can be used at the bedside.

If electric light cannot be used, then *hot* compresses can be used. *Never use cold compresses in treating mumps.*

Altho mumps occur mostly in children from the age of two years up to puberty, yet many adults ar afflicted with mumps. Altho one attack usually confers immunity from another, yet we probably all know of some person having had mumps more than once. In an adult, *metastatic mumps* which involvs the testes, mammary gland, or labia majus, is often quite serious, sometimes causing the loss of one or both esticles. Some cases of *ovaritis* seem to be metastatic sequellæ to mumps.

Besides the local treatment as abov given, for mumps, *rest in bed* is essential during the febril period.

Keep the bowels wel opend.

Often *hot packs*, wrapping the body in woolen blankets wrung out of hot eucalyptus water, is of great benefit in reducing fever and bringing about a very prompt elimination. The proportion of eucalyptus oil to water for these

M packs is a teaspoonful to the quart. Such hot packs and keeping the bowels wel open wil usually prevent metastasis.

When an adult has mumps, always inspect the brests or testicles daily to see whether there ar any signs of metastasis.

Hot packs also prevent nefritis, which sometimes occurs with mumps.

Defness, which sometimes is concomitant with mumps owing to injury of the auditory nerv, can be prevented by hot compresses or radiant light and heat over the affected gland. Often the first indication that the physician has that the labyrinth is affected is the sudden onset of markt vertigo and vomiting.

Iodin therapy is indicated in all cases of mumps and if it cannot be given internally, it is wel to use soluble, stainless iodin over the glands, carefully massaging it in. *In massaging the glands about the neck, always massage toward the larynx.*

The diet in mumps should be preferably liquid and be given as warm as the patient can comfortably take it.

MUSCLES, DISEASES OF

For all forms of myalgia, muscular contractions, etc., no doubt powerful radiant light energy—incandescent and quartz—ar our best remedies.

Myalgia should be treated the same as neuralgia, as the conditions seem to merge into one another.

(*See Reumatism.*)

MYOCARDITIS

(*See Hart Disease*)

MYOSPASM

(*See Corea*)

N NEES, PAINFUL

Probably all hav had patients who complaind of a painful nee following a strain which apparently dislocated one of the semilunar cartilages. The popular treatment is wearing a rubber nee cap, but that has disadvantages.

I find this condition can be treated the best by means of a clay-pad electrode fitted to each side of the nee and the slow sinusoidal current, the superimposed wave, or the pulsoidal current, given with one pole attacht to one side of the nee and the other pole to the other side of the nee. The object is to exercize the musculature about the nee and stimulate the trofic nervs. If there is very much pain, I use the bifurcated cord so as to giv an interrupted positiv galvanic current to the nee, and the indifferent, negativ electrode can be placed over the sacrum.

Along with this treatment I giv the powerful incandescent lamp treatment—that augmented by the quartz light if possible.

For home treatment the smaller lamps or "Nee lamps" ar helpful.

Traction or Extension

Traction for painful nees is probably one of the best modalities we hav, provided a suitable traction table is used.

The *tecnic* for employing traction in these cases is to first allow radiations from the powerful incandescent lamp to fall on the anterior part of the painful joints for about 10 minutes, at the same time massaging the parts wel with soluble iodin (iodex for example). Then put on traction, supporting the upper part of the body under the arms, with the patient lying on the back. Giv traction until the patient complains of uncomfortable pressure under the arms. *All this time hav the radiations from the powerful incandescent lamp fall over the painful area.*

Allow this traction to remain in force for from 5 to 10 minutes, then relax it. Turn patient over on the face and giv the powerful incandescent light radiations over the popliteal space, using massage along with soluble iodin as on the anterior part of the nee. Often intermittent traction is preferable to stedy traction.

A beneficial adjunct in the treatment of this trouble is the *nee-bending or squatting exercize.* I advize a patient to do this two or three times in succession every night and morning and increase the number daily until they can raise themselvs easily 25 or 30 times in succession. This exercize should be practist slowly and systematically. This same exercize is beneficial for what is cald a *"squeaky nee."*

N Clinical Case of Painful Nee

Case 287

I want to mention one particular case that I treated some years ago for this trouble. The lady said she had been broken of her sleep for several months because of the pain in her nee, which she had straind. I examind the nee and found she had on a very closely-fitting nee-cap. She said her family physician had recommended it. I found the circulation in the leg very much impaird because of the constriction, and there wer signs of varicose veins. I told her to discard the nee cap at once, and commenst giving her one hour daily treatments under the 500-candle-power lamp, which was the largest made at that time. After the first treatment she reported that she had a comfortable night's rest for the first time in several months.

I gave her twelv consecutiv treatments with the light, along with the slow sinusoidal current or vibration. Since these treatments she has had no pain in the nee. In this instance the pain was caused from the congestion more than from the injury.

NEFRITIS

Electric light baths probably is the best fysical mesure for nefritis. Next comes the powerful radiant light energy —incandescent light and the quartz light—over the renal region as wel as over the entire body. This increases elimination and enhances metabolism.

The magnetic wave current is also of great value.

Regulate the diet.

NERVOUS ATTACKS

(*See Neurasthenia*)

NERVOUS DIARREA

(*See Intestins*)

NERVOUS DYSPEPSIA

(*See Gastric Diseases*)

NERVOUS SYSTEM, DISEASES OF

I cannot go into a detaild discussion of all the various nervous diseases in such a work as this, but in general the various fysical mesures outlined in this work ar the best

known for diseases of the nervous system. Powerful radiant light energy, and especially the quartz light, ar of markt value in nervous conditions. N

Oxygen-vapor inhalation and the B-D-C therapy ar also reliable agencies.

Chromo-therapy has a very great field in the treatment of nervous diseases.

The magnetic wave current, because of its stabilizing influence, has a deep seated effect upon the nervous system without producing any irritation.

Massage, spinal therapeutics, hydrotherapy, and all the fysical mesures outlined in this work can be used as indicated when treating all nervous diseases.

NERVS, OVER-WROT

(*See Shel-Shock*)

NEUMONIA

Altho this does not usually come under the relm of offis treatment, yet a fysical therapeutist can probably do more for neumonia than anyone else.

As 10% of the deths in the United States result from neumonia, it is important that the offis specialist, as wel as every other physician, should know something about treating it. No doubt radiant light energy from the powerful incandescent lamp, directed over the chest, is of great benefit. Inasmuch as the patient should be kept quiet and in a horizontal position, a lamp should be instald at the bedside and treatment given every hour, allowing the radiations to bring about a profound erythema. If the quartz light could be used, it is of great benefit.

Oxygen-vapor inhalation is of markt benefit in treating neumonia. Fresh air is of vital consequence. If there is much fever, cold air is beneficial, but the aged or those without fever should be kept warm.

The diet should be peptonized milk, cereals, fruit juices, etc.

Iodin therapy is indicated in neumonia.

Keep the patient in a horizontal position constantly and to facilitate their breathing, it is often better to hav no pillow under the hed, but hav the hed of the bed elevated.

N Be very careful in moving the bowels artificially so as to not bring any undue strain upon the hart.

Never allow the patient to raise suddenly or to move themselvs during the fever stage, and keep them quiet in the horizontal position for at least ten days after defervescence.

In neumonia the indicated homeopathic remedy is usually of great benefit.

NEURASTHENIA

Of course suggestion plays a great part in the treatment of neurasthenic conditions, but that alone is not sufficient.

Enhance elimination and remove all irritating influences.

Radiant light energy (powerful incandescent light and quartz light combined) and B-D-C therapy I hav found to be the best of all artificial fysical remedies.

Sunlight and fresh air of course ar of great importance. Often a change of scene does more damage than good, especially if there is no domestic trouble. If any domestic trouble is known to exist, change of scene is imperativ.

NEUROSES

In all forms of neuroses, try to find the predisposing factor and work to eliminate it. Whether you can find the etiological factor or not, treat the condition on general principles, but specifically with the powerful lamp. In nearly all forms of neuroses, there ar indications of sub-oxidation, and therefore oxygen-vapor inhalation is indicated and should be used.

In all these cases I use the indicated, intermittent, colord light to stimulate the sympathetic.

The quartz light is of great benefit in treating all nervous diseases.

Chromo-Therapy, as outlined in the chapter dealing with Chromo-Therapy, is a very valuable adjunct in treating all neurotic conditions. Blue, violet, or green radiations ar indicated. In deep-seated neurotic conditions, I usually employ blue. In milder cases I use violet or lilac. In some of the milder forms, especially if there ar digestiv disturbances, green is indicated.

Do not forget that some neurotics cannot endure the powerful radiant light. Therefore be cautious about giving them electric-light baths or radiations from the powerful lamp.

Neurotic individuals should be treated in as quiet a manner as possible. Any treatment that annoys the patient in any way should be avoided. Seek to find such a patient's whims. You can often do them more good by apparently coinciding with their ideas for a time than to work antagonistic to them.

Kindness and gentleness abov all things should be exercized in treating nervous and over-sensitiv individuals.

NEVI

Altho there ar many forms of nevi, yet the general treatment for all is the *quartz light*. It would be impossible to go into the tecnic for each variety here because even the same variety on different persons has to be treated differently.

Inasmuch as the *quartz light* under compression radiation has a tendency to coagulate the blood in the capillaries, such tecnic is to be used for that type of nevi.

(*See Skin Diseases.*)

NICOTIN POISONING

The treatment for nicotin poisoning is the same as for alcoholism except that nicotin in every form has to be prohibited as wel as alcohol.

Push elimination to the very limit.

Watch the hart.

Within one week *all* tobacco—in all forms—should hav been withdrawn and *total* prohibition of tobacco in any form enforst. Do not allow the patient to be where he or she can even smel tobacco smoke. Inhaling some one else's smoke is about as bad as making their own smoke.

Powerful radiant light—incandescent and quartz— being careful to not blister the patient, is our first aid.

Electric-light baths to toleration aid wonderfully in eliminating the poison from the system.

(*See Alcoholism.*)

NOSEBLEED

(*See Hemorrage*)

O

OBESITY

Proper dietetic and hygienic measures ar first to be considerd. Next comes ergotherapy and oscillation. Both ar very effectiv in reducing flesh.

Suitable exercizes should be enforst.

There ar some forms of obesity that appear to be caused by a syfilitic taint affecting the internal secretions. Just what it is, I do not know, but in some cases I hav obtaind a syfilitic MM VR.

Iodin therapy wil often put the patient in such a condition that the obesity can be reduced. At other times even dieting, unless it is a starvation diet, wil not reduce the flesh. Everything seems to go to fat in such people, even the air they breathe seems to turn to fat.

Electric light baths ar always to be thot of in obesity.

Powerful radiant light—incandescent and quartz—is a great aid.

OVARITIS

As this condition is often caused by gonorreal infection, do not fail to use the B-D-C system for diagnosing it.

The only reliable method for treating this condition is radiations from the powerful incandescent lamp, and if possible augment that with the quartz light. These lights in combination ar almost specific for this trouble. In a very acute condition allow radiations from the powerful incandescent lamp to fall over the region for at least one-half hour at a time. These treatments should be given once or twice daily.

If any pus appears to be present, use compression radiation with the quartz light. (*See Pus Tubes.*)

P

PAINFUL NEES

(*See Nees*)

PANCREAS, DISEASES OF

The treatment for diseases of the pancreas is the same as that for diseases of the liver. Powerful radiant light energy—incandescent and quartz light—is the sheet ancor.

Stimulation of the 10th thoracic vertebra is indicated. P

Lemon juice without sugar is often a great aid in treating diseases of the pancreas itself or conditions arising from wrong functioning of the gland.

PARALYSIS

ELECTRO-DIAGNOSIS*

In testing a muscle electrically, you do not need to remember any complicated formula, as in a helthy muscle electrical stimulation from the faradic, rapid-sinusoidal, or galvanic current produces a *sharp response.* The paretic muscle, on the contrary, gradually loses that irritability to response so that very strong currents ar necessary to produce contraction. A worm-like caracter to the contraction shows that there is a beginning reaction of degeneration. In a complete reaction of degeneration, the muscles wil not react to the strongest faradic, rapid sinusoidal, or galvanic current.

Another good way of testing muscles, where only one side of the body is afflicted, is to compare one side with the other, using the same location on each side for the test, and the same strength of current. The side that responds in a worm-like manner to the contraction shows beginning reaction of degeneration. If a muscle and nerv ar in good condition, there wil always be a sharp response to the galvanic, faradic, or rapid-sinusoidal current, if it is given in a *sudden* make and break manner.

Another point of interest is that the normal reaction is CCc>ACc or AOc. For the reaction of degeneration, the formula becomes reverst, that is, ACc or AOc=or>CCc. As Dr. Moshier puts it, *"The only essential and pathognomonic sign of the reaction of degeneration is the peculiar sluggish quality of the response of the muscle to the galvanic current."*

Many use a bare ball-electrode on an interrupting handle for testing of muscles, but do not do it. Use a button-shaped or sperical electrode *coverd with chamois or sponge.* I hav examind patients on whom the skin was permanently scard from having had someone use a bare-ball electrode with the constant current.

*If any wish to go deeper into electro-diagnosis, I would recommend a small book by Dr. J. Montgomery Moshier entitled Electro-Diagnosis, publisht by the Brandow Printing Company, Albany, N. Y.

P TREATMENT

I hav no specific method of curing paralysis, but in most instances it is greatly benefited, and in some cases cured, by the use of the pulsoidal current, the interrupted-galvanic, or slow-sinusoidal currents; along with psycotherapeutic exercizes, or muscle-culture education with reflecting mirrors, so the patient can easily see the part involvd as he is exercizing it.

For paralysis in the legs, one method I use is to hav one zinc electrode in one glass dish of water and the other electrode in another, and hav the patient put the bare feet into them. The effects ar enhanst by putting sodium clorid, or magnesium sulfate, into the water. Use the pulsoidal current or the slow sinusoidal current. (Figs. 256 and 257.)

Another way for treating this condition is to hav one or both feet in one glass dish of water with one elecrtode and the other electrode over the lumbar plexus. Use same currents as abov.

If the trouble is with the brachial plexus, cervical plexus, or whatever location, we put one electrode over the spinal exit of the plexus and the other at the motor point of the muscle. (Figs. 281 and 282.) Wonderful results can be accomplisht by this systematic procedure. *Never let the contractions be faster than to allow the muscle to contract and come back to rest before the succeding contraction.* This stimulates and exercizes but does not fatigue.

Make the contractions four times that of the respiration.

Remember that you cannot strengthen a muscle or nerv by *pouring* electricity into it. In using electricity or any other fysical modality in the tissues, keep the following axiom in mind: STRESS ANIMATES, STRAIN DESTROYS.

Any method of treatment that wil improve the general helth (be it medication or hygiene) or that wil improve metabolism, is to be considerd. Massage, concussion, vibration, mecanical devices, and radiant-light energy from the powerful incandescent lamp and quartz lamp ar all beneficial.

The static-wave current in all forms of paralysis is a very good mesure. Static insulation, or the static breeze, is also very beneficial in stimulating the nervs and enhancing general metabolism. Powerful radiant light and the sinusoidal current, however, ar rapidly taking the place of static electricity.

PARALYSIS AGITANS (PARKINSON'S DISEASE) P

Paralysis Agitans is an affection caracterized by tremor usually of a passiv caracter, and it is redily diagnosed by the tendency of the patient to fixation of posture. They hav a peculiar propulsiv gait and a mask-like appearance of the face.

To say that this condition can be cured is out of the question, but I am sure it can be greatly relievd and held in abeyance. If it is not treated, it is progressiv and the patient may liv for years and be a nuisance to themselvs and die of some other condition.

As a rule, paralysis agitans *per se* does not cause deth.

The treatment that I hav found most suitable for this condition is powerful radiant light energy—incandescent and quartz combined— and the pulsoidal current. The different muscles can be exercized with a mild pulsoidal current and thus retard the progression of the disease. In many cases it is of great benefit and if we did not know the nature of the disease, we might say that there wer hopes of curing it. It may be there is, but I hav not livd long enuf to find out.

Regulate the patient's dietetic and hygienic mesures to make them as perfect as possible.

Suggestiv therapy aids very much.

Try to keep the patient "smiling."

PARALYSIS, INFANTILE. POLIOMYELITIS ANTERIOR

At the Society of Physical Therapeutics, A.I.H., 1917, Harlan P. Cole, M.D., of New York City very aptly said regarding the fundamentals in the treatment of Paralysis in Poliomyelitis:

(1) Paralysis occurs in consequence of the pressure upon certain parts of the spinal cord by the congestion of an excess of blood which has rusht into the area involvd to destroy the cause of the disease. This congestion is followd by an effusion of serum of the blood into the parenchyma of the cord tissue, and into the sheath of the cord.

(2) Cases wil improve to a certain point thru re-absorption of the effusion deposited in the parenchyma of the tissue of the spinal cord after the excess which accumulated in the sheath of the spinal cord has been re-absorbd.

P. (3) Continued pressure for a certain length of time wil produce destruction of the nerv cels prest upon, and these cels may never be restored or duplicated, therefore a certain amount of paralysis wil be permanent.

(4) Nervs, like blood vessels, intercommunicate, so that nerv function in a paralyzed state may be partly restored by or thru nervs from an unaffected point.

(5) When a case has improved as far as it wil by treatment and rest, and the patient must face the proposition of again beginning the work of life, the last and most important part of the work begins. The patient gets upon his feet and tries to walk. It may be lack of coördination, or it may be lack of sufficient muscle power to carry the weight of the body.

Coördination may soon be acquired by practis, but the other problem is not so easy, and may be the cause of our downfall. In fact, it usually is. If we can solv it we wil go forward, if not the progress wil be backward to the point of limited efficiency or of absolute inability.

(6) Any brace or plaster cast, or other substitute for the use of the leg, wil immediately establish and begin a program that wil end in a weaker condition of the muscles and all other structures, and in progressiv degeneration; and cases that might go on to a much better condition wil fail to do so. Use of the extremity, and of all its muscles, in the line of normal joint action wil hav to be establisht. *Improvement will keep pace with auto-mobility, without which it wil fail.*

Massage wil be beneficial or not, in proportion to its influence on muscle nutrition. Massage does not necessarily mean better circulation; it may or may not be an aid, according as it is applied.

Treatment

Radiant light from a 2,000 or 3,000 candle-power incandescent lamp radiated over the spine seems to be the treatment *par excellence*. I hav receivd some very excellent reports from doctors using this modality. The quartz light, cautiously used, is also of great benefit.

The treatment should be begun along these lines as soon as the first symptoms appear. Do not wait for several days or weeks. Radiant incandescent and quartz light ar of great benefit during the whole course of treatment for In-

fantile Paralysis. The fact that they can be used without touching the hypersensitiv skin that accompanies this affliction, makes it of great value. As patients cannot be taken to the offis during the acute stage, a lamp should be instald in the home or hospital, wherever the patient may be, for giving this Radiant Light Treatment. P

Electric Treatment for stimulating impaird muscles should not be attempted until the acute symptoms hav subsided for at least four to six months. There is great danger in using electrical stimulation, such as galvanism or any other current, over the impaird muscles of a victim of Acute Anterior Poliomyelitis, *erly* in the disease.

In giving electrical treatment, I find the *Pulsoidal Current* to be one of the very best modalities, using Mode A. Another current that has been of great efficacy is the intermittent galvanic current. The tecnic for using that is to pass a direct current thru a Valens Metronomic Interrupter, arranging the switches as for Mode A. For using the galvanic current (constant current), place the positiv pole, or indifferent pole, over some indifferent point, but use the *negativ pole over the motor point of the muscles that you wish to cultivate.* (See Figs. 281 and 282.)

Do not use electricity for too long periods at a time. Much harm has been done muscles by using too strong a current and by having the treatment too prolongd.

Use a current that is just strong enuf to make a slight contraction on the muscles, and never use it over 3 minutes at a seance. Giv these treatments about two times a week. It may take six months to two years to bring about the results aimd for, but it wil pay to use great caution and care in this work. The results, when following out this tecnic, wil be very satisfactory to the physician and the patient.

In the nose use oil of eucalyptus and oliv oil, half and half, and use same over the body when practical. Oil of eucalyptus acts as a disinfectant and prevents contagion, if there really is any danger of contagion. Personally I am not convinst that there is, but it is wel to be careful. *Hygienic mesures ar the true profylaxis.*

I hav not had an opportunity to try out the MM VR on cases with "Infantile Paralysis," but shal if I can find an adult with the wel markt symptoms.

The electrical treatment should be followd by massage and muscle-exercizes for 10 or 15 minutes. Instruct the

P mother, or nurse, just what exercizes to carry out. The more the child can be taut to exercize itself to make contra-pressure against the muscles (tension against resistance), the better. Keep it constantly before you that the *wil* should be traind along with the muscles, and if the child is old enuf, keep him interested in just what you ar doing and try to hav him help you. Exercizing before a mirror is helpful.

If one arm is paralyzed or atrofied and the other normal, it is wel to bind the normal arm down or keep it within the clothes, or a lether tube, in such a manner that the child cannot use it for more than half the time. This wil *compel* it to employ the afflicted member. Ingenuity can be used to very good advantage in correcting any deformity.

In the *general treatment* of infantile paralysis, one point seems to be overlookt by a great many, and that is that the child's extremities ar cold and should be kept warm. For the legs, woolen stockings seem to be the best. It may be that is one reason why radiant light energy has proved to be such a boon in the treatemnt of this disease. Sometimes the arms and hands ar cold and they should be properly protected.

Vibro-massage, if done by an expert, helps wonderfully in enlivening the circulation and warming the cold parts. I hav not laid much stress on vibration for the reason that so many hav used it wrongly for this affliction.

In spastic conditions, do not use contact stimulation of any kind, but on the other hand use sedativ mesures. No doubt the greatest sedativ mesure that can be used for this condition is powerful radiant light energy.

I hav not yet had an opportunity to try out the *actinic rays* from the quartz, mercury-vapor lamp for infantile paralysis, but I would not hesitate to advize it, letting the radiations fall upon the spine and being careful not to cause blisters. This I would advize in conjunction with radiations from the powerful, incandescent lamp.

NOTE.—So far it seems that no case of infantile paralysis has ever been discoverd in a child that has eaten nothing but cookt food. This seems to bear out the theory that infantile paralysis is caused by some forms of mold.

The nursing child might get the mold from the mother's brest. Therefore washing the brest thoroly with a solution of boracic acid seems to act as a preventiv.

Be careful to see that the child doesn't put foren bodies into its mouth. P

In the Nov. 17, 1917, issue of the *Medical Record* was the following article by *Roy Bernard, M.D., of Chicago.* So favorably imprest am I with this article that I am reproducing it here in ful.

The sum and substance of the "Bernard system" of treatment is *relieving pressure,* and his method seems to be very potent for that.

I hav never used traction for treating infantile paralysis. It may be that there is much good in store for us in using traction for producing relaxation at the point of injury. I would thank my readers very much if they would report to me any new procedure that they hav found successful for treating this terrible malady.

The following is the article referd to:

INFANTILE PARALYSIS
A NEW METHOD OF TREATMENT OF

By Roy Bernard, M.D., Chicago

Acute anterior poliomyelitis, while not presenting an unfavorable prognosis so far as life is concernd, remains the *bête noir* of the profession because, in spite of modern advances in bacteriology and serology, no means ar known to prevent the resulting motor paralysis, atrofy, and contractures of the extremities that usually follow the cessation of the acute fenomena.

I spoke of bacteriology advisedly because in the absence of a traumatic factor one cannot conceive inflammatory disease of the spinal cord to be produced by anything else than a microörganism. So long as the causativ microörganism remains unknown that long wil our therapy remain empirical and symptomatic without a specific influence on the cause of the disease.

With the subsidence of the acute fenomena, however, orthopedic and operativ surgery ar resorted to for the purpose of restoring in a roundabout way impaird function. Wel and good, if the damage is limited in extent, for then the results ar comparativly good considering the gravity of the situation; when, however, the damage involvs a good deal of tissue the "curativ" results leave much to be desired.

Years ago the thot struck me that in infantile paralysis some hope for success may be expected from any therapy likely to effect a regeneration of the affected structures, provided, of course, the entire cord has not been destroyd. With the central lesion restored to a more or less normal condition, the periferal effects wil disappear, if not spontaneously, certainly after a while, under the influence of mesures to aid tone and nutrition of nervs and muscles, *e.g.* massage, exercize, baths, electricity, radiant light, etc.

Bearing the pathology of poliomyelitis in mind, it seemd plausible to me, at least theoretically, that in the absence of complete sclerosis of the cornua with total disappearance of the ganglion cels, regeneration of the structures may be possible by a fysiological remedy—namely, hyperemia.

The difficulty that presented itself seemd great, for one would hav to produce a local hyperemia at two inaccessible places, viz., the cervical and lumbar enlargements.

The wel known means of obtaining hyperemia in an accessible part of the body could not possibly be applied to the cord. Experiments with intense dry heat convinst me that even this powerful agent for hyperemization of tissues could not be depended upon to affect more than the superficial musculature and possibly the vertebral colum. To reach the cord other methods would hav to be brot into play.

Gradually I evolvd a mecanical method, about to be described. Actual experiments with the consent of the persons concernd wer undertaken creepingly and cautiously, and only after repeated observations hav I become convinst of the harmlessness of the procedure and its therapeutic efficacy.

Later I ventured to demonstrate to a number of local and visiting colleags that restoration of lost function by causing hyperemia of the cord after the subsidence of the acute fenomena cannot be doubted any more. In other words a therapy has been demonstrated that is not aimd at the periferal results only but at the central causativ factor itself.

Since then several physicians as wel as myself hav had ample opportunity to follow up a number of cases and no doubt being left as regards the permanency of the results, I feel free in describing my method with the hope that the profession wil make equally good use of it in suitable cases.

Tecnic.—My first series of treatment wer accomplisht P without anything save the physician's hands. The entire procedure consists of suspending the little patient between the hands of the physician and producing a number of rythmic swingings calculated to put the spinal colum on the stretch and to flood with blood the lumbar or cervical enlargement.

Simple as is this procedure, it was soon found to present certain difficulties, especially in larger children. In adults the weight of the patient would render the treatment fysically impossible.

Fig. 401. Suspension apparatus for treating Infantile Paralysis. Copied from *Medical Record*, Nov. 17, 1917

To obviate the possibility of error with reference to placing the leverage at the right place as wel as to enable the physician to practis the swinging in a most convenient manner I hav devized a simple suspension appliance, as shown in Figs. 401 and and 402.

The patient when suspended therein for a minute or two is undergoing extension and relaxation of the spine

P without any effort on the part of the attendant. The appliance naturally leaves the physician's hands free to perform the swingings in a proper manner, the fulcrum being supplied by the appliance.

The treatment proper is carried out as follows: The patient is placed in the appliance of a size chosen for the special case. For the first two minutes the patient should be allowd to remain suspended undisturbd for the purpose of obtaining relaxation of the spinal colum. This step is always to be taken at the beginning of all future seances.

The patient is now swung forward and backward with a jerk, somewhat in a manner used to bring down the mercury in a fever thermometer. If this maneuver is properly

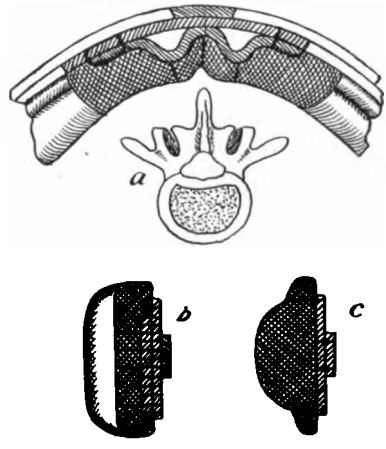


Fig. 402. Sectional view of the appliance shown in Fig. 401.

Fig. 1.—*a*, broken longitudinal sectional view of the appliance with sectional view of spinal colum, showing body section of hevy leather, 4 in. wide, of a length sufficient approximately to encircle the body of the patient; a buckle-equipt strap permits of the appliance being fastend in position around the patient. Secured to the inner side of the body section is a strip of stif lether bent in convoluted form—so formd as to present a recess midway between the ends of body section, opposit to which the padding is slightly deprest. The portion of the spinal colum which is most susceptible to injury, *i.e.* the posterior process, is thus protected by the recess in the belt. The convolutions forming the recess cause the weight of the patient to be borne by those portions of the spinal colum which extend at opposit sides of the posterior process, thus preventing undue pressure against the ribs. Four-inch padding of soft wood or other suitable material extends over the inner surface, held in place by cloth covering. *b*, cross section, center; *c*, cross-section, side. (Medical Record, Nov. 17, 1917.)

executed the lower extremities wil invariably swing back P in an opposit direction at the moment each movement has been completed. This simple procedure is executed 15 to 25 times, depending on the tolerance of the patient.

The séance lasts about three minutes. Treatments may be given every other day or even oftener, all depending upon the reaction. It is noteworthy that when a reaction occurs it assumes in a mild form the fenomena of acute anterior poliomyelitis.

In cases of paralysis of the upper extremities, the physician wil hav to assist during the rythmic swingings by supporting the extension with the palm of the right hand placed over the cervical enlargement, and the left hand under the patient's chin, for it seems impossible to devize a suspension ring which wil prove servisable.

In the event that both upper and lower extremities ar involvd, treatments of the lower extremities should be given for some time and then followd by those directed against the upper paralysis.

A word of caution may not be amiss. Experience has shown that the suspension ring, which acts as a fulcrum, must be placed exactly over the largest part of either enlargement, as the case may be.

It wil be recald that the thoracic enlargement wil be found at the juncture of the 11th and 12th thoracic, and the cervical enlargement at the juncture of the 5th and 6th cervical vertebrae. In all cases of the improper application of the fulcrum the results hav not been satisfactory.

The astonishing results that hav followd this simple treatment can be explaind only by the fact that a hyperemia is produced in the affected portion of the cord. That whatever adhesions may be present wil be broken up by the procedure described, I hav no doubt.

At this time it is scarcely necessary to enter into a detaild discussion of the therapeutic merits of artificially producing hyperemia. We owe it to the genius of August Bier that we hav today a rational conception of its therapeutic indications and contraindications.

Hyperemia has abov all a nutritiv effect on cels. It is, of course, impossible to restore ded cels, but where atrofy and degeneration hav not progrest far enuf to destroy an organ completely, regeneration has been demonstrated so often as to need no further proof. While abso-

Plute proof is demonstrated only by histological methods, we hav no other way to explain the clinical results.

After all, our greatest aim is to cure. The explanation of the cure may safely remain an academic problem. The gravity of infantile paralysis is serious enuf to merit thoro investigation even on a purely empiric basis.

I append a few cases briefly described.

Case 288

Agnes K., aged 2 years 6 months, acute attack September 20, 1911. Previous history negativ. Both arms and legs paralyzed. Treatment begun November 21, 1911. Slight motion appeard after the third treatment. Walkt with some aid after the twelfth treatment. In this case the arms responded first. Discharged cured January 1, 1912.

Case 289

Julia M., aged 18, attack January 6, 1913, both legs being involvd. Treatment begun eight days later. In this case the muscles of the right leg and both gluteal groups had become very atrofic. The patient was discharged cured April 18, with complete functional restoration and disappearance of the muscular atrofy.

Case 290

T. B. B., female, aged 3, attack September 8, 1912. About a week later she was sent to Cook County Hospital where she remaind until October 28. Motion was notist November 11. In another three weeks the child walkt about without any assistance.

Case 291

Catherine E., aged 11, had her attack in 1907 and was since treated by several physicians and "irregular" practitioners without any benefit. When I saw her on January 25, 1913, she had extensiv atrofy of the leg, talipes and lateral curvature, and both arms and hands wer involvd. This case lookt very unpromising on account of the length of time since the acute attack. It required only sixteen séances to bring about the most astonishing restoration of the disturbd functions. The atrofy and deformity of the foot disappeard and when she was discharged (April 12) she could jump the rope like any helthy child.

It would take up too much space to cite other cases, all of which seemd to respond uniformly. In recent cases very few séances wer necessary to demonstrate even to the parents that functional improvement was present; in cases, however, in which the acute attack dated back some years, several weeks would elapse before decided improvement was notisable. Once improvement was notist the recovery proceded very rapidly. P

A few days ago (January, 1917) I got in touch with all the patients who hav been away from my observation for several years. The reports I hav receivd ar so gratifying that I feel justified in saying that cures by this mecanofysiological method ar also permanent.

PARKINSON'S DISEASE

(See Paralysis Agitans)

PELLAGRA

We hav been taut that Pellagra is an endemic skin and spinal disease of Southern Europe, with a few scatterd cases in the United States. We hav also been told that it was caused by eating damaged or diseasd maize. Some hav even said that it was caused by the insect, similium reptans. Others cald it Italian leprosy or Lombardy leprosy.

Some hav confounded scurvy with Pellagra. Sprue has also been confounded with Pellagra. The etiology of both ar apparently entirely different.

It has recently been found that Pellagra is not caused by the ingestion of diseasd maize, but of colloidal silica in drinking water.

It has been found that it is very prevalent in our Southern and Middle States. Owing to this increasing prevalence in many localities, I hav thot it wel to giv some facts that hav been lernd regarding the disease.

E. M. Perdue, A.M., M.D., has translated the works of Allessandrini and Scala into English. He has also duplicated the reserches of these two noted Italian scientists of the Institute of Experimental Hygiene of the University of Rome. Dr. Perdue gave me the following summary from his book on Pellagra*

*_Pellagra_, by E. M. Perdue, A.M., M.D., Burton Publishing Company, Kansas City, Mo.

P 1. "Pellagra is a cronic acid intoxication caused by the ingestion of *colloidal silica* in drinking water.

2. "Pellagra is strictly localized and is contracted in those regions where the water supply commonly drunk by the people is derived from clay soils.

3. "Pellagra has no relation to diet, work, domicile, or sanitary environment.

"For the abov reasons pellagra is confined to comparativly old agricultural regions, having a fixt population, whose soils ar derived from the decay and wethering of the crystallin and igneous rocks. The geografical distribution of pellagra coincides with the geological distribution of clay soils derived from the acidic rocks.

"Pellagra does not occur in 'new' countries where the soil has not been leacht of its primitiv alkalies. Pellagra does not occur where the soil is derived from the disintegration of limestones or dolomites. Pellagra does not occur among peoples who habitually drink 'hard' or 'limestone' water.

"For the same reasons stated abov, pellagra agrees with the geografical distribution of pine timber. Pine trees wil not grow on alkalin soils. The same is true of the chestnut on the hilsides.

"Pellagra is not found in prairie countries. Prairie lands ar alkalin. This is the reason that they ar prairies. They ar too alkalin for trees.

"For these same reasons pellagra is endemic from northern Portugal to Italy, in the Tyrol, and across the slopes of the Carpathians to Bessarabia. In America it prevails along the eastern slope of the Appalachian highland, over the Piedmont Plateau and the Coastal Plain, especially from Maryland to Texas. On the inner slopes of this same highland it prevails in the clay regions of Tennessee and Kentucky. It is not found in the great 'limestone valleys' of the Appalachian Highland from Vermont to Alabama. It is very common in the 'clay region' of west Tennessee.

"Pellagra is also common on the slopes of the Ozark, Boston, Oachita, Arbuckle and Wichita mountains in Missouri, Arkansas, Oklahoma and Texas. For the same reason there is some pellagra on the Pacific Coast. The states of Michigan, Wisconsin, Indiana and Illinois ar coverd to a greater or less depth with glacial drift derived from the

great pre-Cambrian Shield surrounding Hudson's Bay. This P
is largely disintegrated and wetherd remains of igneous and crystallin rocks. Where it is devoid of alkalies and is deep enuf to be the source of surface water supplies, it is the cause of pellagra.

"Colloidal silica is antidoted and renderd inert by the alkalin carbonates and by the carbonates of the alkalin erths. Therefore pellagra cannot occur where the people habitually ingest hard water containing small amounts of the carbonates of sodium, potassium, calcium and magnesium.

"Colloidal silica in soft waters acts as an enzyme, in that it substitutes water in the colloidal substance of the tissue cels and replaces it with the base of the alkalin salts setting the acid free, and being in turn freed itself to repeat its action indefinitly. Its action results therefore in a dehydration of the system and the freeing of an excess of acid, especially hydrocloric.

"The toxicology of silica has been thoroly workt out by the Homeopathic investigators. The clinical picture of 'Silicea' of the Homeopathic authorities is the clinical picture of pellagra. In the last three years (1917) this proving has been repeated by Allessandrini and Scala.

"The symptomatology of pellagra has long been divided into the classical triad of *'cutaneous manifestations, digestiv disturbances and nervous disturbances.'*

"The cutaneous manifestations ar those of dehydration and the concentration of the acidosis in the parts of the body exposed to evaporation, and manifest themselvs in the classical 'mask' abov the collar, and the classical 'gauntlet' below the ristband. These manifestations ar pigmentation, erythema, desquamation, blistering and ulceration.

"The digestiv disturbances ar those of dehydration and acidosis. They ar pyrosis, loss of appetite, perverted appetite, indigestion, constipation, diarrea, drying up of the digestiv fluids, denudation and ulceration of mucous surfaces, atrofy and thinning of the coats of the stomac and intestins, thickening and induration of the pylorus and paralysis of the sfincters.

"The nervous disturbances ar those of dehydration, first hyperesthesia, followd by incoördination and finally complete paralysis. These disturbances affect the whole nervous system and the mentality.

"Pellagra affects the domestic animals in pellagrous regions as wel as the human population. Cattle ar particularly susceptible, and the affection even extends to the dogs and cats of pellagrous families. The laboratory animals, such as rabbits, guinea pigs and monkeys ar very susceptible to the intoxication.

"The prevention of pellagra is a very simple matter and consists in drinking *hard water.* Wels and springs can be made safe by thoroly cleaning out all clay, walling up and covering the bottom with broken limestone about a foot thick. Reservoirs and city water supplies should be treated the same way. This system is now being followd with success in Italy.

"The specific treatment of pellagra consists in the administration of a proper alkalinity. The Italian authorities administer one c.c. of a 10% solution of *sodium citrate* daily by hypodermic injection. If in any case this method is found objectionable, it may be given by the mouth in greater amount, say three times a day.

"At the same time hav the patient drink copiously of *hard* water, keep the bowels open and the kidneys at their best. Control pyrosis by milk of magnesia or calcium lactate.

"Treat all symptoms symptomatically besides the administration of the antidote. The average case requires from one to two months' treatment."

Any fysical mesures such as powerful radiant light, electric light baths, and oxygen-vapor inhalation ar also of great benefit in treating this disease.

Quartz light therapy is said by some to be a great aid.

PELVIC DISEASES

FYSICAL THERAPY stands out first and foremost for the treatment of Pelvic Diseases of both women and men.

The Pulsoidal Current and other Sinusoidal Currents ar no doubt the best forms of electricity to use, except galvanism.

Years ago I did not think I could treat Pelvic Diseases without static electricity. I hav lernd that the Sinusoidal Currents and the Powerful Radiant Lamps—Incandescent and Quartz—wil do more than static electricity ever could or can do for these conditions.

The Powerful Incandescent lamp alone wil do great P
things in these diseases, but combined with the Quartz Light we hav a natural remedy that has no peer.

For local treatments the Quartz Light can do more than any other modality, if the proper applicators ar used and the tecnic is carefully observd.

For the treatment of *constipation* and in fact any and all pelvic diseases of both male and female, probably electricity along with powerful radiant light energy—incandescent and quartz—is the greatest remedial agency.

Exercizes for Pelvic Diseases

For all functional uterin disturbances, special exercizes ar indicated, and these exercizes ar illustrated in Part Four.

For conditions such as a sensitiv ovary or pyosalpinx, *exercizes ar contra-indicated*. These conditions should be first relievd and then proper activ exercizes prescribed.

The first exercize is *deep abdominal breathing*. I know of no simple or complicated mesure for relieving many of the pelvic disturbances in either the male or female that can equal *deep rythmic breathing*.

With some, this method of breathing comes naturally while others hav to be traind to it. This exercize can very easily be lernd, and twenty inhalations in this manner should be practist every morning and night and as many times during the day as the patient can loosen the clothing, lie down, and *relax*.

I hav seen some of the worst cases of functional pelvic diseases cured by this simple method alone.

(*Classified Pelvic Diseases ar mentiond in their alfabetical order.*)

THE PENIS

Many neurotic conditions in boys and adults ar caused by an adherent prepuce (fimosis, or parafimosis). In these conditions surgical interference is cald for.

Many obscure neurotic conditions can be relievd by dilating the prepuce. This I hav done by means of hemostat forceps or some other kind of forceps. To be done thoroly, local anesthesia is necessary in many cases.

Many patients (old and young) complain of an irritable condition about the meatus. This is often a reflex caused by an inflamed condition just posterior to the glans. It is

P also caused by a prostatic or bladder reflex. Concretions in the bladder, commonly cald "gravel," wil cause this irritability about the meatus.

The orifice of the meatus is often constricted or bifurcated. I dilate it with a suitable electrode carrying the negativ current, or it can be done by cutting.

Warts and other growths about the glans penis can be easily removed by electricity.

The quartz light thru suitable applicators is very beneficial in treating many mal-conditions about the glans penis.

PERICARDITIS

(See Hart Disease)

PERITONEUM, DISEASES OF

Acute Peritonitis

No remedy can compare with powerful radiant light —incandescent and quartz—for this condition. If it wer possible to instal such lamps at the bedside of a person confined to the bed, it would be a great aid.

Many cases of peritonitis wil go to a doctor's offis, and ar easily diagnosed by the fact that the patient wants to flex the thighs rather than extend them, and by tenderness all over the abdomen. Such cases should hav the radiations from the powerful incandescent lamp directed over the abdomen for an hour at a time.

A quartz light can be used cautiously in these cases until the skin is tand. Then it can be used as much as 10 minutes at a time along with the incandescent light.

In using the quartz light for peritonitis, be careful to not produce any blistering. Get just a mild erythema and that wil be followd by tanning.

Tuberculous Peritonitis has to be treated the same as tuberculosis in any part of the body, but direct the powerful incandescent and quartz light over the abdomen to the limit of tolerance.

PITYRIASIS

(*See Skin Diseases*)

PLEURISY

Pleurisy means an inflammation of the pleura regardless of its pathology.

The symptoms ar often confused with intercostal neuralgia, but by means of a stethoscope it is quite easy to differentiate these conditions.

Another method, which has proved to be satisfactory, is to hav the patient lie on the back and hold the ribs so they cannot expand when a deep inhalation is taken. If this relieves the pain, the condition is almost sure to be pleurisy.

Dr. I. K. Williamson in the Lancet, London, has mentiond what he considers a new and reliable fysical sign for neumothorax and pleural effusion. He says that in this case there is a markt diminisht blood pressure in the leg as compared with that in the arm on the same side, a difference usually at least of 10 millimeters and in many cases over 20 millimeters.

As the blood pressure of a person lying down is practically the same in the arm as it is in the leg, this sign might at times be very useful.

The treatment is that of any inflammation, namely, powerful radiant light energy. I hav had remarkable success in treating pleurisy by means of radiations from the powerful incandescent lamp. If to this is added radiations from the quartz light, we hav practically the very best fysical mesure known.

The patient should be instructed to breathe as deeply as possible while the light is radiated on them and to little by little accustom themselvs to taking deep breths. In that way the adhesions ar broken up and the tendency to stooping to relieve tension is lessend.

In addition to the radiant light therapy, the B-D-C therapy and oxygen vapor ar never to be neglected in treating pleurisy.

PNEUMONIA

(*See Neumonia*)

POISONING BY DRUGS

Bring about profound elimination as rapidly as possible and giv antidote for the drug.

Electric-light baths and powerful radiant light radiation ar useful.

Hav the victim suck the wound and swallow the saliva. This is the *Autotherapeutic mesure* for treating this condition.

As soon as the patient can get to your offis, use the quartz light over the area to bring about a very profound erythema.

Bring about rapid elimination thru bowels, skin and kidneys.

Giv calcium sulfid to toleration.

For bee stings the quartz light is probably the best of all. Next comes hot water. Keep the part in water as hot as can be borne for an hour or two at a time. It is often advantageous to put into this water some mild antiseptic.

POMFOLYX

(*See Skin Diseases*)

POST-OPERATIV TREATMENT

(*See Adhesions*)

PROSTATIC DISEASES

Prostatic Hypertrofy

For treating prostatic diseases I not only use the powerful incandescent lamp in the manner illustrated in Fig. 145, but I use my bi-polar rectal electrode, Fig. 224, having the metal parts placed *antero-posteriorly*. Thru this electrode either the slow-sinusoidal current can be past or, what I think is preferable, the pulsoidal current, Mode A, Fig. 251, can be used for from 5 to 10 minutes. In this way we get a profound contraction of the prostate as wel as beneficial reflex action thru the sacral plexus.

Many cases of hypertrofy, which ar supposed to be fibrous, can be greatly relievd by this method. Prostatic hypertrofy should be treated in this manner as soon as the first symptoms of the condition ar evident. To postpone the treatment makes the case just so much more difficult to handle because of the fibrous condition which is almost sure to slowly progress.

Nearly every physician has more or less cases, the subjectiv symptom of which is retention of urin. Of course retention of urin must be only a *symptom* and secondary to some nervous or pathological condition.

If it is a symptom of a *neurotic condition,* the treatment seems quite easy to outline. If, however, retention of urin is a symptom of a *pathological condition,* such as a prolapst bladder, enlarged prostate, or tumors, one must seek to remove the cause.

To "remove the cause" is easier said than done, but to *remove the urin* is the *first* thing to be done. I am often cald in consultation relativ to this, and the first thing I advize is to place the patient in a sitz-bath with the water as hot as can be borne—water to contain some oil of eucalyptus or a little turpentine, altho eucalyptus is better. Let the patient sit in this water an hour if necessary, but keep the water hot all the time by changing it. At the same time it is wel to let the patient hear water running or pouring into some vessel.

If the sitz-bath is not practical or the patient cannot leave the bed, *eucalyptus water stupes* taken from water as hot as can possibly be borne and laid across the pelvic region and over the perineum is the proper procedure. The water for these stupes should contain about one teaspoonful of oil of eucalyptus to each pint of water. Sometimes these stupes wil hav to be changed every ten minutes for two or three hours before the urin wil flow. While these stupes ar in situ, let the patient hear water running or being pourd slowly from one vessel into another.

Swetting the patient is also an excellent plan to pursue. Get the patient into just as profuse a perspiration as possible. It helps to relieve tension.

The *passing of a catheter,* if it can be easily done, wil at once relieve the distress of bladder tension, but this cannot always be done, especially with enlarged prostate or where there is some reflex spasm about the neck of the bladder or urethra.

If the cause of the retention of urin is hypertrofy of the prostate, as soon as the pressure in the bladder is relievd, the bi-polar rectal electrode should be used—using the pulsoidal or some other sinusoidal current.

A brief review of two cases, diagnosed almost the

P same, is appropos. Both of these cases wer men past sixty years of age. Both wer diagnosed by several physicians and surgeon specialists as having hypertrofy of the prostate caused primarily by some malignant growth. The retention of urin was the symptom which caused each one of these patients to call in medical advice. In both cases the surgeons advized an immediate operation "to save life."

One refused to hav an operation and hot eucalyptus water stupes wer used. Within two or three hours he voided urin and the acute stage had past. The physician who took charge of this patient began using the pulsoidal current thru the bi-polar rectal electrode and the patient recoverd, altho several physicians and surgeons said he could not liv without an operation. It is now one year since his attack and he is symptomatically wel and able to attend to his business.

The other patient did not fare as wel. He followd the advice of the surgeon to hav the prostate removed. No hot water applications wer used. In fact I hav been told by one of the consulting physicians that it never occurd to him that hot water stupes would be beneficial in this condition. An operation was performd and the patient died within three days.

I do not mean to say that the two cases wer identical, as I do not know, but I do know that hot stupes should hav been tried because if they ar persisted in, surgical interference is often not necessary.

I can recall case after case of acute exacerbation of prostatic hypertrofy closing the bladder so that the urin would not pass, where catheters wer used without any attempt at using hot water applications, and bad results followd the catheterization.

If a catheter has to be used, by all means try to accomplish the desired effect by means of a *soft rubber catheter.* Metal catheters hav caused so much trouble even when handled by those who wer accustomd to them that I think it is not out of place to caution every one on this subject.

The prevention of *residual urin* has alredy been mentiond, but I might ad that when there is a tendency to hav residual urin, rectal electro-therapeutic procedures wil often remedy the cause.

Don't forget that the "all-fours" position wil often aid very much in emptying the bladder of urin. (*See Cystitis.*)

Generally the physician does not see a case of pruritus ani until some time after the beginning of the trouble. Sometimes this condition is a *reflex* and at others it is simply a *local* condition. I think most cases can be cured in a simple, fysical manner.

I connect the aluminum, dilating electrode (Fig. 227) with the negativ terminal and anoint it with soluble iodin preparation (iodex). The clay pad over the abdomen is connected with the positiv terminal. I push the dilator into the rectum, allowing it to push a small quantity of iodin preparation up beyond the sfincter, and turn on from 5 to 10 milliampères of current. I let this continue about 5 minutes and then turn on the rapid-sine wave to the patient's toleration and let that continue for about 5 minutes. This procedure may be reverst if the sfincter is very unyielding, that is, giv the rapid-sine wave for about 5 minutes and follow it for about 5 minutes with negativ galvanism and soluble iodin.

Another method is to use the metal, rectal electrode coverd with gauze and gold beater's skin, after it has been soakt in a solution composed of glycerin and water, equal parts, and tincture of iodin 5% to 10%. This electrode should be connected with the negativ pole and inserted into the rectum and from 5 to 10 milliampères of current past thru it for 5 to 10 minutes.

When hemorroids complicate pruritus ani, anoint the itching parts with a soluble iodin preparation after having given treatment for hemorroids.

(Remember that *iodin is electro-negativ* and is repeld from the negativ pole.)

Another way of using iodin cataforically is to use a solution of potassium iodid connected with the negativ pole. The iodin ions wil seek the positiv pole while the potassium ions wil unite with water and remain in contact with the negativ pole. *Nascent iodin* is especially indicated in this condition.

Another method is to pass an applicator into the lower rectum carrying a piece of gauze wet with 5% to 10% tincture of iodin solution. Withdraw after a few minutes.

The latest and very best method for treating pruritus ani, or pruritus about the genitals, is the *quartz light* therapy. This is illustrated in Part Two, Lecture V. Often a speculum has to be employd to focus the radiation on the offend-

P ing part. Often one radiation wil relieve or cure the condition—at least it wil mitigate the symptom.

PSORIASIS

(*See Soriasis*)

PSYCASTHENIA

(*See Splancnic Neurasthenia*)

PUS TUBES

Inflammation of the Fallopian tubes should be treated the same as ovaritis. Compression radiation is almost specific for this condition. I then employ general radiation with the combined powerful incandescent light and the quartz light over the entire body.

In all these inflammatory conditions in the pelvis, never fail to treat not only locally but *generally*, and use the B-D-C system for ascertaining whether the predisposing cause is gonorrea or not. As a rule it is. (*See Ovaritis.*)

PYLORIC OBSTRUCTION

(*See Gastric Diseases*)

PYLOROSPASM

(*See Gastric Diseases*)

PYORREA ALVEOLARIS

(*See Mouth, Teeth and Gums*)

PYROSIS

(*See Gastric Diseases*)

R

RABIES

I know there is such a condition known as Rabies, but I really think most of the conditions cald Rabies ar *mad dog scare*. I hav been thru a few of these scares and know something about them. My advice is to catch the dog, put it in confinement and see whether it really has rabies. Most of them hav not.

Don't make the dog mad by tormenting it. We would all get "mad" if tormented as many dogs ar. R

For the local treatment of the wound, quartz light thru the appropriate quartz applicator is no doubt the very best remedy.

Take the *fear* out of the victim. Hav him suck his wound and swallow the saliva. This is the best *natural* method and the one other animals use. It is *autotherapy*.

RECTAL DISEASES

It is a wel known fact that many insidious complaints ar caused by relaxation of the lining membrane of the rectum and colon.

Pruritus Ani and *Herpes Ani* and *Eruptions* in the gluteal region surrounding the anus ar often caused by an unhelthy condition of the mucous membrane at the lower end of the large intestins. Very often the trouble is located at the sigmoid flexure, and if one is not equipt with the quartz light to giv local treatment, the bi-polar rectal treatment, using the pulsoidal current, wil often rectify the condition.

Impotency and *frigidity* ar many times caused by a diseasd condition of the large intestin. Altho I hav used all forms of electrical treatments, I hav never found any that can compare with the *pulsoidal current* when using the mode grafically shown in *A*, Fig. 251. This produces a stimulation thru the intestins that is indeed remarkable. Along with this treatment I always giv powerful light—incandescent and quartz—over the abdomen.

Bi-Polar Rectal Treatment

In *forst* dilation of the rectum the membranes ar often injured, and the second condition is worse than the first.

For this reason I devized the *Bi-Polar Rectal Electrode*, shown in Fig. 224. This electrode should be lubricated with some good lubricant, soluble iodin for example, and the pulsoidal current past thru it.

If a person is not fitted up for using the pulsoidal current, they can use the slow-sine wave, set to alternate quite slowly. Probably the pulsoidal current for rectal stimulation is the best modality. By using this form of treatment thru the rectum, we stimulate the sympathetic ganglia on the anterior part of the sacrum and coccyx. In addition to this we treat the rectum itself without any forst dilation.

R So far my results hav been very satisfactory and I am receiving very flattering reports from my pupils who ar using this method. Sometimes the pulsoidal current, or the slow-sinusoidal current, used in this manner, wil make the bowels move before the treatment is completed.

For *constipation* this method is generally sufficient if used in connection with suitable exercizes and the powerful incandescent light and the quartz light.

Rectal Dilation and Stimulation

Dilation of the rectum, if carefully executed, has been proved to be very effectual in many neurotic conditions. I do not advize promiscuous *forst* dilation of the rectum as the second condition is not always what one might wish. There ar, nevertheless, some cases of contracted sfincter in which dilation seems to improve the general helth of the patient.

For this purpose I hav devized a special, cone-shaped, aluminum electrode (Fig. 227), which I use as a dilating electrode, and pass one side of the pulsoidal current thru it, the other side being attacht to the clay abdominal electrode, as before specified.

The tecnic for this is as follows:

I make the dilator as warm as the patient can stand it by passing hot water over it. I then anoint it with soluble iodin and place the round tip into the anus. By placing the rubber tube, *T*, Fig. 246, over the end of the pendulum, *P*, of the metronomic interrupter, the current can be past thru without its being interrupted. I then turn on the rapid-sine current as strong as the patient can bear it, at the same time giving stedy pressure on the electrode. Within 2 or 3 minutes the sfincter wil become relaxt and the electrode wil enter without any trouble.

Then I take off the rubber tube, *T*, and set the interrupter at *four times the respiration*, and carry on the treatment for 10 minutes, having the clay-pad electrode and sand pad over the abdomen and having the powerful incandescent lamp radiating over the abdomen, as shown in Fig. 148. This not only givs *rectal dilation* but *rectal stimulation*, which is very beneficial in many conditions.

Some advocate the use of *negativ galvanism* thru this electrode for dilating the sfincter ani. The *tecnic* for this is to connect the electrode to the negativ side of your instru-

ment and the positiv pole to the abdominal pad. After entering the tip into the rectum, exert stedy pressure using from 5 to 10 milliamperes of current. Often the rectum wil dilate sufficiently with this strength current to allow the dilator to enter. Personally I much prefer the rapid-sine current. R

Never neglect to examin the rectum in all neurotic or obscure reflex conditions, because it is often the seat of many of the neuroses that the physician meets.

(*See Part Five, Lecture II.*)

REGURGITATION

(*See Gastric Diseases*)

RETROVERSION

(*See Dysmenorrea*)

REUMATISM, NEURALGIA, SCIATICA, LUMBAGO, TORTICOLLIS, GOUT, ARTHRITIS.

I shal mention these apparently allied conditions under one hed, as the fysical treatment, either local or general, is so much alike.

Always test the urin in any of these conditions and if it shows over 25 or 30 by the decinormal-sodium-hydroxid-fenolthalin test, take such mesures as wil reduce the acidity. For testing the acidity, I use the simple outfit furnisht by the Abbott Laboratories of Chicago. For reducing the acidity in the urin I employ Sodoxylin, manufactured by the same concern. I also employ dietetic mesures.

Each of these conditions calls for *elimination*. Therefore we must see that the bowels ar wel cleard, preferably by magnesium sulfate, or sodium fosfate taken in hot water on arising in the morning. As a medicament for stimulating the liver I always employ podofylin. *Avoid mercury*.

Use soluble, stainless iodin on the affected parts. Employ iodin therapy .

There ar many fysical, local mesures that seem to work very wel indeed in these conditions, and I shal mention them in the order of their importance.

A 3,000-*candle-power lamp* is to be thot of first. This is to be used over the painful area until the skin is very hyper-

Remic. This produces a relaxation of the tissues, relieves stasis, and enhances elimination. If you hav a quartz light, use it also.

Electric light baths ar considerd as second to the powerful radiant energy.

Another modality that is wel to use, if you ar so equipt, is the static-wave current, with the electrode applied over the painful areas. This modality relievs stasis and has a peculiar action in enhancing elimination. If the two modalities ar used at the same treatment, use the light first.

High frequency current from the surface, vacuum electrode used over the painful areas, while the muscles ar drawn as tense as possible, is also of great benefit and many times wil work like magic. Notis that I mention *while the muscles ar under tension.* I hav found that even if it cause great pain for the patient to contract an inflammatory muscle, it should be done, as during the application of the high frequency current, thru the surface, vacuum electrode, the pain subsides in a very few minutes. *A dry towel between the tube and skin increases the reaction.*

Another method is the use of the *sinusoidal current,* applied one pole over the origin and the other over the insertion of the painful muscles. This deep massaging of the muscles seems to reliev the stasis, or pressure, about the nerv sheaths and remedies the cause. Before using this modality, always use the powerful incandescent lamp, as that prepares the tissues for such treatment. My tecnic in using the light is to giv it 10 or 20 minutes over the painful area and 10 or more minutes over the spine at the origin of the nervs involvd.

The static wave current I giv for 20 minutes, and the sinusoidal current I never giv for more than 10 minutes. *Do not overdo these treatments.* The time limit given I hav found by experience to be correct. Incandescent radiations can be used for 30 or more minutes over the inflamed area with good results.

For a very painful localized area, the *static sparks* ar indicated, but as they ar so painful I try everything else first and as a rule do not hav to use them. In fact I hav given up for good the static modalities, as I can do as wel or better by using radiant energy and the sinusoidal current.

For a *gouty toe,* the powerful heat from the incandescent lamp can be used along with the high-frequency current,

but almost always the light alone is sufficient. If you hav a static machine the blue-pencil-brush discharge is useful for this condition. R

In all of these reumatic conditions there appears to be a sub-oxidation of the tissues. Therefore oxygen-vapor inhalation and deep breathing in the open air ar of great benefit.

Zone therapy is also of great benefit for relieving the pain. Often that alone, with dietetic mesures wil relieve the condition.

The Magnetic Wave Current is often very helpful in treating these diseases.

Traction, or in other words extension, by means of a suitable apparatus is also at times very beneficial in relieving painful points, especially about the spine and joints.

Subcutaneous Injection for Neuralgia

There has been publisht in the French Journal of Medicin and Surgery a "New Treatment for Neuralgia." The principle upon which it is used is not entirely new, but perhaps the tecnic and formula ar. I hav not used it, but it looks as if it might be of use in many instances, and I giv it here. The treatment is by means of subcutaneous injections of a solution composed of the following:

Sodium clorid	5 gms.
Sodium sulfate	10 gms.
Steril water	100 mils

The injections ar given at the painful spots in a dose of from 5 to 10 c.c., repeated every two or three days. It is claimd that sciatica can be cured by 10 to 15 injections.

The object is to free the nerv endings which ar embedded in hyperemic tissues. Air as wel as distild water hav been used for this before, and some hav reported very good results; but this saline solution seems to be a great improvement.

The sites of election for injection in the case of sciatica ar given as the upper part of the buttock, the middle and posterior parts of the thigh, and the outer side of the leg. Of course in using the hypodermic needle, it is necsesary to make sure that the point is not in a vessel. A little numness and tingling ar usually experienst by the patient.

I cannot see as the method is at all hazardous and it is quite painless. One thing the users of this method report, is that the patient nearly always experiences immediate relief.

Intercostal neuralgia, femoral cutaneous neuralgia, facial neuralgia, and in fact any form of neuralgia, can be treated in this same manner. Good results ar also reported in using this method for diffused painful neuritis following contusions of the shoulder, hip, elbow, nee, etc.

Never use alcohol hypodermically for neuralgia or any other inflammatory condition.

Acute arthritis is a serious condition, if all the joints ar involvd. The condition can hav so sudden an onset as to make the physician at first wonder if his diagnosis is correct or not. The causes ar, first, a tired-out, toxemic condition. Second, severe exercize. The victims ar usually those who think they can endure anything and they forget they hav a limit to endurance. Rest in bed is the first requisit. Powerful light and heat for local treatment ar cald for. *Watch the hart!* Often these cases get up with endo- or pericarditis, so *keep the patient quiet* during the attack and for a few days afterward.

REUMATOID ARTHRITIS

(*See Arthritis Deformans*)

REYNAUD'S DISEASE

This complex condition is a vasomotor affection. The disease occurs more frequently in women before thirty and is quite common in children. Almost any disease seems to be an etiological factor.

Reynaud's original hypothesis was that the disease is an affection of the vasomotor trofic nervs.

Altho the prognosis is very unfavorable, yet if one can prevent gangrene there is hope. Powerful radiant light energy and especially the quartz light ar our best therapeutic agencies. The radiations ar put over the affected areas as wel as over the entire body.

Everything should be done to enhance metabolism and the treatment in general should be the same as for tuberculosis. Out door life and carefully regulated diet ar imperativ. Regulate the diet so that the meals wil not precipitate an attack. Keep the bowels open.

In cold climates, it is better that the patient wear linen mesh next to the skin with light woolen underclothes over it, and it is better to wear mittens than gloves. R

Some advocate the protecting of the affected parts with ointments before going out in the cold.

The pulsoidal current is indicated in many cases and is often beneficial in treating this condition. Some think that the intermittent galvanic current is better than the rapid-sine current. I do not think that high frequency currents hav any special effect over this disease, but I do know that powerful radiant light energy is very beneficial.

RING WORM (TINEA TRICOFYTINA)

This as wel as other fungoid skin diseases can be quickly and easily cured by cataforesis, using zinc sulfate upon the positiv pole.

Quartz Light is no doubt our very best modality for ring worm. One treatment is usually sufficient. Localize the light thru a suitable applicator.

Another method for curing ring worm is to paint the lesion with a solution of iodin and then paint over this area, and about one-quarter inch beyond, with *iodized flexible collodion*. This not only givs the iodin effect, but shuts out the air from the fungus. Sometimes one application wil be sufficient, while at others three or four paintings wil be necessary. Terpene peroxid, in place of iodin, wil cure the condition.

RINITIS, BRONCHITIS, HAY FEVER

For these affections I know of nothing that can be compared with the 3,000-candle-power incandescent lamp over the face and chest for from 10 to 15 minutes, and over the back for the same length of time. Along with this should be given from 20 to 40 minutes wel directed inhalation of oxygen vapor and B-D-C therapy.

In using all fysical mesures, never forget hygiene and diet. *Thoro elimination is the keynote of all diseases and especially those affecting the respiratory system.*

Stimulation of the 6th and 7th cervical vertebræ increases vagal tone, and therefore is indicated in every disease affecting the respiratory system.

R The use of iodin in the form of soluble, stainless iodin on the skin or of calcidin taken internally, I hav found to be indicated in most diseases of the respiratory system.

Formula of a noted specialist for Nasal Spray—"BEST EVER." *Always keep it on hand.*

Creosote (Beechwood)	2 mils
Menthol	8 gms.
Terebene, Oil Pine Needles	
Oil Eucalyptus—aa	16 mils
Pure Hydrocarbon Oil	500 mils

M—Use in Nebulizer.

I hav used this for years with very gratifying results.

For congestion of the Schneiderian membrane, Zone therapy acts like magic.

Zone therapy is also a very efficient aid in bronchitis and hay fever.

The quartz light is a great aid in treating these conditions. Some claim it is specific.

RINITIS—CLINICAL CASES

Case 292

Mr. X., 45 years of age. Came to me suffering with what he said was a periodical attack of rinitis, which he had every time he got any cold, and the attacks generally lasted for ten days. As our big lamps wer in use, I could not giv him that treatment, so gave oxygen-vapor inhalation and B-D-C therapy for 40 minutes. He said he felt so much relievd that he would like to come the next day for another treatment.

When he came the following day he said the "cold" was "broken" and he had never had an attack like that cleard up so quickly, altho he had tried all kinds of remedies and physicians. After the second treatment I told him to come again the following day, if he felt any bad effects from the rinitis.

About two weeks later he reported that the attack was broken after the first treatment and after the second treatment he felt wel.

Case 293

Mr. R., 45 years of age. Merchant. Came to me suffering with terrible pain in the frontal sinus which he said

had kept him awake for three nights and he wanted me to R
giv him an opiate. This I did not do, but put him on the table and exhibited the rays from the 3,000-candle-power lamp for one hour, covering the eyes wel with an opaque substance. Within half an hour the pain thru his hed had left.

After this radiant light treatment I had him take oxygen-vapor inhalation along with B-D-C therapy for 40 minutes. He went home that night and slept comfortably without any pain. The next day he came for another treatment, and from that time on has had no return of the trouble.

This was a case of congestion of the frontal sinus caused by an acute attack of rinitis, and the frontal sinus was very much involvd. The effects of the light wer to produce surface hyperemia, which reduced the congestion within. At the same time the penetration from the light had a very profound effect. The oxygen-vapor inhalation and B-D-C therapy tended to brace up the whole system, to say nothing about the local effects of the terpene peroxid vapor along with the oxygen passing thru the nasal passages.

I could mention very many cases of rinitis that I hav cured in this manner.

Case 294

Mrs. A. Aged 42. Cronic bronchitis for years and coft until nearly worn out. I gave powerful lamp radiations over the chest for about 20 minutes and about the same length of time over the back in the thoracic and cervical region, and added vibration between the 4th and 5th cervical vertebræ.

After fifteen daily treatments there was no cof to speak of and treatments wer discontinued. For three years her general condition was excellent, after which time I lost track of her.

RINOFYMA

This nodular swelling and congestion of the nose, which is often cald *acne hypertrofica*, is best treated with the *quartz light*. Probably no other modality can be compared with it for effectivness.

RODENT ULCER

Treatment the same as for Lupus Vulgaris.
(*See Skin Diseases.*)

R

RUMINATION

(*See Gastric Diseases*)

S

ST. VITUS DANCE

(*See Corea*)

SAND, INTESTINAL

(*See Intestins*)

SCARLET FEVER

Scarlet fever should not be considerd lightly even if it is cald "Scarlatina." Many patients ar deceivd by having the physician call the case Scarlatina, which to them means a "light case of scarlet fever." Scarlet fever is no light matter, whether it is cald Scarlatina or Scarlet Fever. No doubt many of the weak harts and kidneys ar caused by the old-fashiond "allopathic" method of treating this malady.

For internal medication the *homeopathic* indicated remedy is without any doubt the best. Remember you ar treating an *individual* and not the named disease. Therefore the remedy that might be indicated with one patient would not be indicated with another, altho the disease might hav the same name. As a rule calcium sulfid, ½ grain every hour, is beneficial.

No doubt the *hydrotherapeutic method of* treating scarlet fever is the best of all, and if carried out judiciously, everything else being equal, wil prevent all sequellæ.

Altho some hydrotherapeutists advize the use of ful baths at 90° to 100° F. for 10 minutes or longer, the hed being kept cool by a cold compress, yet I believe the hot, eucalyptus water pack is the best. (The proportion is a teaspoonful of oil of eucalyptus to the quart of water.) It opens the pores of the skin and brings about elimination that cannot be equald by any other method unless one is fitted up for giving regular Turkish or Russian baths.

To prevent the hedakes and delirium that often accompany scarlet fever, cool compresses on the hed seem to be the best procedure.

Many of the laity hav an idea that such and such procedures "drive the eruption in" but it is very easy to convince them that *swetting* the patient wil *"bring the eruption out."*

Giv the patient plenty of fresh air, but be careful that their bare skin is not exposed to drafts of cool air during the entire activ stage of the disease.

The diet should be preferably liquid and given as warm as the patient can comfortably take it.

For the convalescent period, the *electric-light baths* and radiations from the *powerful incandescent lamp* as wel as quartz lamp, can be clast among our very best therapeutic mesures. *Oxygen-vapor inhalation* is also of markt value.

The eyes should be protected and *not used* while the patient is suffering with scarlet fever or any other febril condition, and they should also be protected from bright light for three or four weeks after the activ stage of the disease has past. This should be thoroly imprest upon the patient's mind or upon those who hav charge of the patient.

To prevent contagion in the household, hang sheets up at communicating doors, keeping them wet with a 5% solution of formaldehyde. Each member of the family should keep the bowels wel open and use antiseptic nasal and throat treatments. Eating onions also appears to be a profylactic mesure.

After giving hot eucalyptus water packs, it is wel to rub the patient's skin with sweet spirits of niter if they ar inclined to be nervous. If not, rub them with alcohol, bay rum, witch-hazel, or oil eucalyptus.

SCURVY

Dietetic mesures ar probably all that ar really needed for treating this condition. Fruit juices, especially orange, lime, prune, lemon, etc., ar of great value. Onions ar also of great value in treating scurvy.

Infantile scurvy can be just as wel treated by a *potato diet,* using a tablespoonful of masht potato to the pint of water added to the tewnty-four hours' feeding of milk. This can be added in place of the usual cereal diluent. Probably it is best to ad the masht potato to the water in which it is boild because in that manner the vitamins ar preservd.

Suitable bathing, electric light baths, powerful electric light therapy, quartz-light therapy, oxygen-vapor therapy, etc., ar to be considerd next to dietetic mesures for treating scurvy.

SEA SICKNESS or CAR SICKNESS

Sea sickness or car sickness is generally caused by some toxemia. See that the bowels ar wel cleard and that the diet before the beginning of the trip is very rigidly regulated.

S *Horlick's Malted Milk* is probably one of the best diets to put a patient on before taking a trip if they ar at all troubled with car sickness or sea sickness.

Plenty of fresh air wil often prevent the patient from being sea sick or car sick.

Bromid of potassium taken in doses of from thirty to sixty grains, wel diluted in water, about two hours before beginning the trip is often effectual.

SEBORREA

I wish particularly to call attention to the form of seborrea known as seborrea sicca, or *dandruf*. Nearly all of our patients hav dandruf and wil ask us how to treat it. It is good policy to know how to anser such questions. I advize first that the scalp be thoroly clensd with carbenzol soap and water. Then thoroly wet it with the following mixture:

Bay Rum	200 mils
Liquor Potassi Arsenitis (Fowler's Solution)	25 mils

As this mixture is poison, it is wel to safegard the bottle by sticking needles thru the cork so they project on each side.

This bay rum and arsenic solution may be used every other day for the first week and after that not more than once a week. With some people it may cause a little local dermatitis, in which case it should be discontinued for a week or so, depending upon the idiosyncrasy of the patient.

The scalp should be thoroly clensd with *carbenzol soap* at least once a month.

Along with this local treatment, I use the powerful incandescent lamp, which seems to hav a very beneficial effect.

Quartz Light also is very useful, some say "specific."

Several of my patients, who wer being treated daily with the quartz light, hav remarkt that their hair had stopt coming out and that they had no more dandruf. This change was caused by the quartz light. (*See Skin Diseases.*)

Seborrea in other forms is best treated by some constitutional remedy along with the powerful incandescent lamp, quartz lamp, and soluble, stainless iodin, as wel as oxygen-vapor inhalation and B-D-C- therapy.

In the male, the pulsoidal current thru the bi-polar rectal electrode thru the rectum is probably the best electrical mesure. In the female, use the pulsoidal current or the slow-sine current thru the vagina and thru a weighted clay pad on the abdomen.

Use powerful, radiant light energy (incandescent light and quartz light combined) and B-D-C therapy.

Suggestiv therapy plays a leading rôle in treating this condition.

SHEL-SHOCK

It is now time that we began to realize what "over-wrot nervs" really means. This great war with its terrible guns in use is bringing about a nervous condition in the soldiers and in those who ar exposed to shel explosions that is wel named *shel-shock*.

Some time ago I advocated the use of light, color, and other natural fenomena for treating this condition. The plan that I outlined is to hav the room in which these unfortunate people ar treated made to look as much like springtime as possible. For example, hav the ceiling tinted to represent the sky and the side walls painted to represent foliage. Hav artificial light in the room to resemble sunlight. This can be done by shedding electric light thru properly colord screens or it can also be done by shedding quartz and incandescent light simultaneously into the room. The lights should not be glaring but should be reflected or past thru material that wil take away all glare. The prevailing color of the room should be yellow, which wil giv the general effect of sunlight; so if the light is past thru yellow silks it has a very soft effect. Mixt with the yellow should be green of the color of foliage. All this blends wel for soothing over-wrot nervs.

By changing the color thru which the light passes, other effects can be produced to meet the requirements of the patient. For example, with many patients violet or purple or magenta would be indicated rather than yellow, especially after they had become accustomd to yellow and wer on the road to recovery.

If possible, electric lighting effects can be instald in such a recuperation ward so as to simulate sunrise, sunset, and other natural fenomena.

S The placing of flowers that do not hav too hevy an odor about the room has a very good effect. Another useful adjunct is to hav singing birds within hearing distance of the patients.

The whole object of this scheme is to hav springtime in every sense of the word surround the patient. This has a soothing effect upon such patients that cannot be duplicated by any other procedure. Often a delicate odor in the room, such as the odor of apple blossoms, is to be recommended, especially if apple trees in blossom ar painted on the walls.

Music of the right kind also has a very markt therapeutic value in treating over-wrot nervs.

Giv the patients plenty of rest and nourishing food and keep them cheerful.

Suggestiv Therapy is of paramount value in treating over-wrot nervs, irrespectiv of the cause.

The magnetic-wave current, because of its peculiar stabilizing influence upon the nervous system and because of its absolute freedom from producing irritating effects, is also indicated in treating shel-shock or over-wrot nervs.

The abov outlined method wil work wonders in restoring victims of shel-shock. These same methods wil work wonders in recuperating persons with over-wrot nervs from whatever cause.

Chromo-Therapy and Natural-Fenomena Therapy hav a great field in treating neurotic conditions, and especially over-wrot nervs.

SKIN DISEASES

I mention skin diseases collectivly as the treatment for all skin diseases is about the same. First regulate the diet to conform with the urinary findings. Cut out all fried foods. Often all fats hav to be prohibited. Usually all sugar must be prohibited.

Use iodin therapy. Soluble, stainless iodin (iodex) is indicated in most skin diseases.

The fysical mesure that seems to be the best of all is powerful radiant light energy—powerful incandescent light and quartz light combined.

Such stubborn diseases as soriasis and some forms of eczema can be cured by means of these two lights alone. Probably the quartz light wil do it without the other, but

by using the two together, the beneficial effect is greatly S
enhanst.

In many skin diseases after the skin is cleard up there wil be a return within a few months or a year. Treat the same as at first. The recurrences wil grow farther and farther apart and wil be less severe. This is especially true of soriasis.

SMALLPOX

Altho an offis specialist wil not seek out smallpox cases, yet it is a good plan to know something about handling the condition if the physician should be where it was necessary.

In the first place, *vaccination is not at all necessary.* In fact, I think it is a detriment. If it is possible to giv powerful radiant light treatment, especially with the quartz light, or the combination of the two, smallpox could be handled as redily as any other disease.

Inasmuch as I hav personally been thru a smallpox siege, I am not very much afraid of it. A thoro elimination thru the bowels and kidneys, a light diet, and quantities of onions ar the mesures to pursue. Giv the patient all the fresh air they can get and *sunlight* if possible. Try to make it possible. It is best to let the sunlight come on the body without passing thru glass as the actinic rays ar of great value in treating smallpox. Of course the patient must be isolated.

I do not believe smallpox is as contagious as scarlet fever, and I believe that the *scare* of smallpox kils more people than smallpox itself.

Don't rush to be vaccinated the moment you hear of smallpox. That is superstitious. Simply clear out the bowels, eat nourishing food, and eat onions three times a day and *don't worry!*

Calcium sulfid is also a great profylatic remedy.

Don't be afraid of smallpox and the chances ar that you wil never take it.

Hygienic mesures wil prevent smallpox, but I do not think that vaccination has ever prevented it or ever wil.

Iodin therapy is always to be thot of in treating smallpox.

To prevent pitting no doubt red light is of great benefit. Oliv oil on the face is also of great benefit. Iodex anointed on the face and body wil also prevent pitting, or at least is a great aid. Keep the patient from scratching by

S binding the hands when they ar asleep. Painting the face with tincture of iodin is considerd by some the best method of preventing pitting. It is generally best to paint it on once or twice a day according to the sensitivness of the skin. At first the patients may complain of smarting but soon they do not mind it. With some patients it is impossible to use tincture of iodin as the skin is too sensitiv. About the eighth to the tenth day a fine, dry, parchment-like mask wil peel off where the tincture of iodin has been used.

The *quartz light* no doubt is the modality par excellence for treating smallpox and for preventing pitting. If the radiations from the powerful incandescent lamp can be used at the same time, the quartz light therapy is greatly enhanst.

One physician told me that he had taken several cases thru smallpox with no remedy except a mild solution of bicromate of potash, having it just strong enuf to color the skin and putting the patient in a bath tub of this solution. He said he did this two or three times a day, kept the bowels wel open, and carried out every hygienic mesure needed for handling smallpox, and he had universally good results.

I know that onions ar profylactic in smallpox and cannot speak too highly of their use in this condition.

SORIASIS

The *Actinic Rays* from a quartz, mercury-vapor lamp ar without any doubt the best agency for this stubborn skin symptom. Treat the *whole body* with the rays as wel as the local lesions. Radiations from the powerful incandescent lamp is of great value.

Oxygen-vapor inhalations along with the B-D-C therapy aid greatly in curing this condition. Terpene peroxid is also very beneficial—some say it is "specific." *Iodex* is also beneficial as a local treatment.

If there is a return of the scaling, as there usually is, treat again and so on til it is worn out and the disease eradicated from the system.

In soriasis as wel as in other skin diseases, there must be *constitutional* treatment, and in all cases of skin diseases one must never forget to keep watch of the urin.

Regulate the diet and enforce the best hygienic methods. (*See Skin Diseases.*)

Tabes Dorsalis—*See Syfilis.*

Poliomyelitis—*See Infantile Paralysis.*

For nearly all diseases of the spinal cord powerful radiant light energy—incandescent and quartz light—is indicated.

The pulsoidal current in many cases is also indicated for stimulating the nervs.

The magnetic wave current is also very soothing.

In all affections of the spinal cord, be sure to see that the spinal colum is in good form, and use such manipulation as is necessary to reduce muscular contractions about the vertebræ.

For all inflammatory conditions about the spinal colum powerful radiant light energy is the best remedy.

SPINAL NERVS, DISEASES OF

Neuritis—*See Reumatism, Neuralgia, etc.*

Brachial Neuritis—*See Reumatism, Neuralgia, etc.*

Coccygodynia—*See Reumatism, Neuralgia, etc.*

In treating *neuritis* of all kinds powerful radiant light —the incandescent and quartz light—is our best remedy.

Neuritis really comes under the hed of these allied conconditions—reumatism, neuralgia, sciatica, arthritis, etc. As the name implies, it is an inflammatory condition of the nerv or nerv sheath.

The *treatment* for this condition is powerful radiant light energy—incandescent and quartz. If no one has used the quartz light in connection with the powerful incandescent light in cases of neuritis, they hav no idea how beneficial it is. It is a new departure in the treatment of this condition.

Coccyalgia. Inasmuch as Coccyalgia is only a localized arthritis or neuritis or, as some might say, a neuralgia of the caudal extremity of the spinal colum, this treatment is the same as for neuritis—powerful incandescent light and quartz light.

As mentiond in the lecture on *zone therapy,* I might say that coccyalgia, lumbago, and other reumatic or neuralgic pains ar often cured like magic by means of zone pressures, correctly used over the correct zone or zones. The tecnic is described in the lecture on Zone Therapy.

S

SPLANCNIC INSUFFICIENCY
(Relaxation of the Splancnic Vessels)

SPLANCNIC NEURASTHENIA
(Neurasthenia Concomitant With Splancnoptosis)

Splancnoptosis, Visceroptosis, Abdominal Tosis, Glénard's Disease, ar all synonymous terms used to express an abnormal downward displacement of the abdominal viscera.

Abdominal Tosis may include tosis of the stomac, liver, spleen, kidneys, and intestins; altho the downward displacement may include only the stomac and intestins. If the stomac only is lowerd, the condition is cald gastroptosis; if the intestins ar lower than normal, it is spoken of as enteroptosis; and so on.

Splancnic Insuffiency indicates a condition in which the tonicity of the splancnic vessels is lowerd. In other words, they ar not efficient.

Another term for this is splancnic relaxation or relaxation of the splancnic vessels. Inasmuch as the splancnic vessels contain such a large proportion of the entire amount of blood in the body, any relaxation or lack of tone in the splancnic vessels has more or less of an effect upon the entire organism.

One can hav splancnic insufficiency and not splancnoptosis, but a person cannot hav splancnoptosis without having splancnic insufficiency.

When a neurasthenic condition exists along with splancnic insufficiency or splancnoptosis, it can be cald *splancnic neurasthenia.*

Abdominal Tosis involvs primarily the intestinal mass —enteroptosis associated with gastroptosis. Nefroptosis is concomitant in about 40% of all cases of visceroptosis, hepatoptosis in about 10% and splenoptosis in about 5%.

Etiology

Splancnoptosis is said to be more prominent in women than in men, but from my experience I cannot agree with this classification. I should say that as many men suffer from this condition as women, because their habits seem to more than overweigh the etiological factor of childbirth in women.

Splancnoptosis occurs in all ages and among all so-cald civilized people.

The following ar some of the predisposing factors: heredity, rachitis, constricted waist (either congenital or acquired from corsets or tight clothing); hevy clothing hung from the waist; improper breathing; childbirth, tumors; sudden straining or lifting; sedentary habits; lack of exercize; prolongd exertion without adequate rest; being on the feet too much; fallen or "falling arches"; shoes that change the natural poise; prolongd upright position after a long period in bed; rapid emaciation; obesity; over-eating; dyspepsia; atony of the stomac; use of liquor, tobacco, and all other dope; narcotics or stimulants; enlargement of the liver; jaundis; constipation; auto-intoxication; worry; and anything that produces lowerd vitality or relaxation of the abdominal walls.

SYMPTOMS

1. *Subjectiv.*

Splancnoptosis is often congenital and may exist without any symptoms. The most prominent symptoms seem to be obscure neurotic conditions. These nervous fenomena may include symptoms of every known ailment. The more the patient knows about diseases, the more he complains of. They include especially symptoms of "tumors" which change location; "painful" localized areas which ar migratory; drowsiness; lack of ambition; insomnia; "blues;" "discouraged feeling"; melancolia; desire to be left alone; feel like weeping; fear of "catching" this or that disease; bad temper; always looking for a new remedy or a new physician; sensitiv areas in mouth, farynx, nose, or on any other mucous membrane; bad taste in mouth; dryness in mouth and throat; rising of food or "hot liquid" in throat; belching; borgorygmus; nervous dyspepsia; globus hystericus; sense of fulness in the epigastrium; constipation or diarrea; colitis; hemorroids; abnormal pelvic conditions in women and menstrual disorders; hedake; vertigo; constricted feeling in hed or body; cold or num hands or feet; nees cold; sensitivness to heat or cold, or drafts of air; many asthmatic conditions. *Many symptoms ar ameliorated when lying down.*

2. *Objectiv.*

General appearance is nervous or downcast or haggard —"worried look;" general restlessness is pronounst; extremities, hed or body always moving; skin often sensitiv

S to touch; dry skin; complexion often appears abnormal; gait may be nervous or hevy; clorosis or anemia is often present; *low blood pressure*—generally lower in the sitting position than in the recumbent; blood pressure may be different in one side than in the other; temperature is often irregular; tung furd and chocolate colord; teeth and gums bad; abdomen may protrude, drop, or show no change. Abdominal tension lessend; tenth rib is very often free at its costal extremity; displaced viscera may sometimes be seen in thin-wald persons; the umbilicus often appears as if puld downward and inward, and sometimes moves during inspiration or expiration.

Palpation of abdomen often reveals misplaced viscera thru the relaxt walls; hard masses of intestinal contents may often be palpated; liver is generally enlarged; stomac is often vertical, or lying on bladder; sinking of hepatic and splenic flexures is often notist; transverse colon easily palpated and sensitiv to the touch.

Owing to the relaxt condition of the splancnic veins, blood gravitates into this area and causes congestion. Pressure upon the abdomen wil cause the blood to go back into the right hart and thus re-establishes the circulation. In the normal condition the vaso-motor mecanism is sufficient to prevent the blood gravitating into the splancnic area, but in splancnic insufficiency, or splancnoptosis this mecanism is exhausted and lacks the necessary tone. It can be likend to a pump with a leaky valv which continues to let the liquid flow back.

The Pulses, if both taken together with the rists on a level with the hart (dual-puls system), patient grounded and standing facing east or west in a subdued light, wil nearly always be found to vary. Compression and lifting of abdomen wil at once make the pulses equal. This objectiv symptom is very constant and reliable, and shows us how to remedy many of the symptoms.

Air-Colum Percussion tels us a great deal. If the patient is grounded and faces east or west in a subdued light, the lines of maximum dulness over the lower abdominal area on each side wil not be on the same level. Air-Colum percussion wil also indicate the position and condition of the viscera.

The X-ray is very valuable in clearing up the diagnosis of visceroptosis. By employing bismuth "meals" not only

can the location and position of stomac and colon be outlined, but the motor efficiency of the same can be determind. S

TREATMENT

1. The General Treatment includes the remedying of all predisposing factors as far as possible and adoption of hygienic mesures, such as fresh air, nourishing food, rest, regulation of clothing, etc. Change of scene and rest wil work wonders in this form of neurasthenia.

Exercize of the abdominal muscles is of great benefit. Deep abdominal breathing exercizes should be practist while lying in bed. Such gymnastics as wil bring the abdominal muscles into play should be faithfully carried out, namely, lying on the back and flexing the thighs on the abdomen; flexing the trunk on the thighs while lying on the back, etc.

(a) Stimulation of the spinal nervs can be done by means of the pulsoidal current or the slow sinusoidal current, placing one terminal over one side of the vertebra and the other terminal over the other side; or by placing one electrode right over the spinous process and the other over the sacrum, in the hands, or over the abdomen.

Stimulation of the spinal nervs can also be produced by means of radiant light and heat, or concussion, or vibration.

For giving the pulsoidal current I use the Valens Metronomic Interrupter, illustrated in Fig. 246.

For giving the slow-sine wave, any good sinusoidal apparatus can be used, but I use either the universalmode, illustrated in Fig. 207, or the polysine, illustrated in Fig. 209.

For radiant light I use the powerful incandescent lamps illustrated in Figs. 148 and 153 as wel as the quartz lamp.

For concussion I employ Valens Spinal Concussor illustrated in Fig. 260. With this concussor I giv concussion over the 6th and 7th cervical vertebræ for about one minute. This increases vagal tone. I then concuss the 6th and 7th thoracic vertebræ for about a minute. This equalizes the splancnic blood supply. If the liver is enlarged, as it generally is in splancnoptosis, I concuss the 2nd lumbar vertebra for about a minute. This contracts the liver.

In concussing with this concussor, I leave the concussode in contact with the skin during the whole treatment, but strike the concussode handle with a firm staccato blow at the rate of about four times the respiration of the patient.

The *duration* of these treatments should be for the pulsoidal or sinusoidal current 10 minutes.

For concussion, from 10 to 20 blows.

For powerful incandescent light, from 10 to 20 minutes.

I want to mention in particular about radiations from the powerful incandescent lamp in combination with the quartz light for neurasthenia concomitant with splancnic insufficiency—*splancnic neurasthenia.* This method seems to have been overlookt. I hav been greatly gratified by the results obtaind from its use. Along with any other modality, the use of the powerful incandescent lamp for 10 minutes on the spine and 10 to 20 minutes on the abdomen aids greatly in the metabolic processes. It also aids in relieving the nervous symptoms as wel as improving digestion and splancnic tonicity.

For the relief of congestion that is almost always present in some of the viscera in abdominal ptosis, radiations from the powerful incandescent lamp hav a most beneficent effect.

The fact that radiant light and heat dilate the periferal blood vessels, thereby relieving organic congestion and improving visceral circulation, givs us another potent reason for using this modality. The quartz light has a specific effect on the nervous system and so that is especially indicated in this condition.

Oxygen-vapor inhalations when given in a dark room with the patient grounded and sitting or reclining parallel with the magnetic meridian, along with the intermittent indicated color (B-D-C therapy), aids greatly in every procedure.

(b) *Abdominal Support.*

All authorities ar of one opinion regarding supporting the abdomen for splancnoptosis. Of course, there ar extreme cases where an abdominal support is of no use. When the stomac and transverse colon ar nearly down to the pubes, an appliance would not support but would constrict. When the ovaries ar sensitiv to palpation, in cronic appendicitis, or in abdominal abscess, a belt of any kind is contra-indicated. For nearly all other cases of visceroptosis, a support that lifts and supports the abdomen is indicated and should be worn.

A support to be of much real benefit for visceroptosis should be made of a stif material, preferably lether, and of

a keystone shape, with the shorter length next to the pubic S arch. This unyielding abdominal pad should be so constructed that it, wil keep its place. Strong elastic belts should go around the body to giv a constant pul to the pad.

The common form of abdominal belt, which is made of various kinds of webbing and comes up high on the abdomen, is contra-indicated, as it tends to produce the very condition it is designd to alleviate. The stif, corset-like arrangement, advertized to correct the poise of the wearer, is also detrimental and wil do more harm than good in a case of abdominal tosis. Such a device has a tendency to

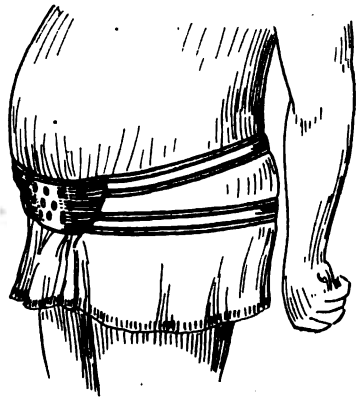


Fig. 403 Illustrates the Valens Improved Abdominal Support in position. Notis that it is worn over the undershirt. Notis that the pul is upward and inward. Notis the ventilating holes which pass way thru the pad.

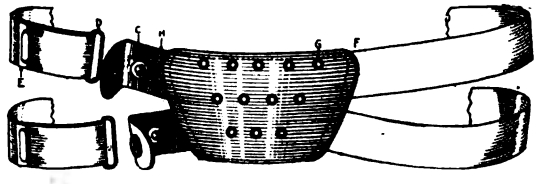


Fig. 404. Showing Valens Improved Abdominal Support redy to put on.
G represents the ventilating holes.
H represent the strong lether tab sewd into the pad.
C represents the socket or pivot fastener by which the belt is fastend on by passing this tab thru a loop wire *D*. As this is past thru and snapt together, it can never come off until it is taken off. This method of fastening prevents any slipping or loosening of the attachment.
E represents a specially made suspender buckle for making the belt longer or shorter.
F shows how the hevy web belt is sewd in the pad.

S cause abdominal tosis. *The pressure of an abdominal support should be upward and inward from the pubes.*

As nothing could be found to meet my ideas for an abdominal support, I devized one, which is sold under the name of Valens Abdominal Support. This support is made of the best strap lether with padded, truss-elastic-web belts.

This abdominal support is illustrated in Figs. 403, 404, and 405.

In prescribing such a belt, one should select a size, the pad of which wil come between the anterior superior spines of the ilia. The width of the pad should be less than half its length. The lower edge of an abdominal support for this condition should come as near to the pubes as possible to allow the patient to sit down with comfort.

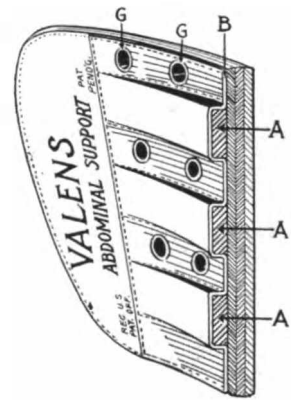


Fig. 405. Showing the ribbing, ventilating holes and general construction of Valens Improved Abdominal Support.

A represents the ribs.

B the lether that covers these ribs. This lether lining is ruf and the ribs stand out so when the belt is fastend on it cannot slide up and down or to the right or left.

G represents the ventilating holes.

In fitting any abdominal support, the patient should lie on the back while putting it on and draw the abdomen in as much as possible while adjusting it.

A physician by knowing when to use and how to adjust a suitable abdominal support can often remedy many obscure conditions which cannot be remedied in any other manner.

Fig. 52 is a drawing of one of my patients, and these lines ar exactly as they wer found. The general contour

of this abdomen shows the condition of tosis or relaxation of the splancnic area. This patient's right puls was much higher than the left, and it wil be notist that the working and reflex lines on the right side ar much higher than they ar on the left. These two conditions generally go hand in hand.

All of this patient's peculiar symptoms wer relievd by wearing a properly adjusted abdominal support. The fact that these lines wil come on the same level immediately after lifting the abdomen up shows at once how to treat this condition.

Valens Abdominal Support

Valens Abdominal Support consists of a lether pad substantially trapezoidal in shape and with hevy truss-elastic-web belts.

Fig. 403 shows this abdominal support on the body. Observ that the belt pulls upward and inward from the pubes. The pad *lifts* and *supports* the abdomen. (Never put one of the belts under the buttocks unless on a lady with very flaring hips.)

Fig. 404 shows this abdominal support unclaspt redy to put on. The elastic belts ar provided with hevy, sliding suspender buckles shown at *E*.

Fig. 405 shows the pad cut down thru its center so as to giv an end sectional view, as wel as a side view of the part of same.

Lether Pads

Notis that the pad, Fig. 405, is made of layers of strap lether, cemented and stitcht together over a form. The inside ribs ar cemented, and over same a lining, *B*, of ruf lether is cemented and sewd to the middle layer. The lining is key-stone shaped and tapers at the edges. This lining is so sewd that each rib, *A*, stands out prominently and prevents the pad from slipping up or down on the abdomen. The beveld edges of the lining section keep the pad from moving to the right or left.

The pad is moulded so it wil fit the abdomen. After over thirty years of use, this keystone shape for an abdominal pad has been found to be the best.

The Elastic Belts

The very best reinforst truss-elastic-web is used in this support. This webbing is padded on the under side so it is comfortable for the wearer. As the belts stretch, they can be taken up by means of the hevy suspender buckles.

Leading Features

The main features of the Valens Abdominal Support is that it does just what the name implies—*supports the abdomen.*

Another feature is the ventilation in the pad. Fig. 404 shows this very wel indeed. These ventilations, placed as they ar between the ribs as shown in detail in Fig. 405, giv the patient great comfort when wearing this support, even in the hottest wether.

There ar many abdominal supports on the market, some very good, some good, and some useless. The cloth supports ar not to be clast with those made of lether. While the cloth supports wil do very wel for a short time or for a thin person, they ar not at all adequate for a fleshy person, and neither ar they intended for wear and tear. Only for the extra expense, probably all abdominal supports would be made of lether.

Corsets can be made with an abdominal lifting and supporting device attacht. When having such a corset made, belts must be on to pul upward and inward, and the corset must be loose abov the umbilicus. Otherwise it wil tend to produce the very condition that the abdominal support is intended to correct.

To Put the Support On

To adjust the Valens Abdominal Support to the body, it is best to lie on the back with thighs flext. It can be put on when the person is standing if the abdomen is drawn in wel.

Place the pad as near the pubic bone as possible and equidistant from the anterior, superior spines of the ilia. Place the belts in a comfortable position so they draw inward and *lift* the abdomen.

A hevy, pendulous abdomen.
A relaxt abdomen.
Abdominal tosis.
Asthmatic condition.
Splancnic neurasthenia.
During pregnancy and after labor until walls ar strong.
Many so-cald "hart diseases."

SIZES

The VALENS ABDOMINAL SUPPORT is made in the following sizes:

	long	high	long	circumference
No. 7 pad	6¾ in.	x 3⅝ in.	belts 30 in.	36 in.
No. 8 pad	7¾ in.	x 3⅝ in.	belts 34 in.	40 in.
No. 9 pad	8¾ in.	x 4⅛ in.	belts 36 in.	44 in.
No. 10 pad	9¾ in.	x 4⅜ in.	belts 42 in.	50 in.
No. 11 pad	10¾ in.	x 4⅝ in.	belts 48 in.	56 in.

When selecting the size, mesure circumference on level with navel and select size by comparing circumference colum abov with the circumference of the patient.

Special shapes and sizes made to order.

Seal skin, walrus skin, pig skin, or other special lethers, can be made up to order.

Pads for concave abdomens can be made to order.

SPLEEN

Most diseases of the spleen ar best treated by means of radiant light energy—radiations from the 3,000-candle-power incandescent lamp and the quartz light together—electric light baths and B-D-C therapy.

STAMMERING

Inasmuch as stammering is caused by a spasm of opposing muscles in the articulating mecanism, the treatment must be not only suggestiv but gymnastic.

Before commencing the treatment of this condition, physicians should realize the importance of notifying parents, if they see the least signs of stammering developing in the children. It is easy to *prevent* stammering, but it is quite difficult to rectify the condition. Nearly all stammerers

S ar neurotic. They hav at times spasms thru the chest which resemble asthma.

In treating this condition, instruct the patient to take a deep breth every time *before they begin* to articulate and then articulate rythmically. I hav found it very efficacious to hav the patient practis pinching their fingers together before they commence each word, and in some cases before they commence each syllable. In that way their mind was imprest with the fact that they wer to begin an expulsion of air and they would be prepared for it.

Inasmuch as a stammerer is usually quick-temperd, care must be taken to keep them from losing their temper.

Often the physician sees the stammerer after the original cause of this neurotic condition has past away. Therefore the treatment is really a re-education of the vocal mecanism.

Syllabication is no doubt the rational cure for all vocal and retorical difficulties. Teach the patient to pronounce the last syllable of each word as distinctly as they do the first. Do not allow them to decapitate or decaudate their words.

Deep breathing exercizes ar of the greatest importance. In such cases teach the patient to breathe rythmically, counting four while they inhale, eight while they hold the breth, and eight while they exhale.

Giv the patient muscle training not only of the tung, throat, and vocal organs but also of the chest and neck muscles. In fact it is wel to giv them scientific gymnastic training from hed to foot. It teaches them co-ordination and muscle control which nearly every stammerer lacks.

STERILITY

Even tho we do hear a good deal about "birth control" and "race suicide," there ar numberless women who would giv anything to become pregnant. The offis specialist is often consulted as to a cure for this condition.

In the first place, find whether the husband's semen has live spermatazoa. This can only be told by the microscope, or if a person has no microscope they can tel by placing some of the fluid between two pieces of glass and looking thru it at a bright light, especially the sun. If it has live spermatazoa in it of any quantity, there wil be a constant change of reflection in the light past thru the glass. The

man is most often steril from having gonorreal infection or S
from having operations about the testicles, which hav occluded the vas deferens. For this condition I do not know as there is any remedy.

If the man is impotent, many times that condition can be cured by the pulsoidal current thru the rectum, using the bi-polar rectal electrode; and also by powerful radiant light energy—incandescent and quartz. I know of no drugs that hav any special value for impotency, but I am having continued success in treating this affliction by means of fysical, natural methods.

Sterility in the woman is most often caused by gonorreal affection. Often the young wife notises soon after marriage that she has more leukorrea than she has ever had before, and within six months or a year she wil begin to complain of heviness thru the pelvic region and soreness in the ovarian region. From these symptoms we can almost immediately diagnose gonorreal infection. The husband has probably been told by his physician that he was "safe and sound," but as mentiond under the hed of gonorrea, there is no way of knowing whether a person is cured of this disease except by the B-D-C method. Sometimes the husband wil infect his wife with gonorrea even if he contracted it twenty years before.

Another prevalent cause of sterility in the female, which is overlookt by most physicians, is the reaction of the secretion in the vagina. If this secretion is acid in reaction, it wil, as a rule, kil the spermatazoa. Many times the wife has a dry vagina and uses some kind of lubricant which often has an acid reaction and thus prevents conception.

Another cause for sterility is that the spermatic fluid is prevented from entering the uterus from some unknown cause.

Often *diseases of the rectum* indirectly cause sterility. I am sure of this from the fact that I hav often cured a woman of sterility by simply getting her colon to working properly.

Malposition of the uterus is often the cause of sterility. Often rectifying this condition wil cure the trouble.

Often *mucus plugs* in the cervix ar a cause of sterility. These ar best removed by positiv galvanism, using a small copper electrode in the cervix and using the positiv current —5 to 10 milliampères about 5 minutes. The current should

S then be turnd off and the electrode removed. It wil be found to hav a quantity of mucus attacht.

The quartz light used thru the long quartz pencil electrode is also a potent means of relieving the cervicitis which is so often responsible for sterility.

Walking on all fours from 50 to 100 or more steps night and morning wil often overcome sterility.

In fact, the patient's *general condition* should be treated and if that is right, it wil go a long way toward rectifying sterility.

Many times the position taken by the parties during coition has a great deal to do with preventing sterility.

Physicians can do no better servis to humanity than to overcome sterility in those who ar anxious for offspring.

STOMAC, DISEASES OF

(*See Gastric Diseases*)

STYES

(*See Eye*)

SYCOSIS

Modern reserch shows that sycosis is parasitic in origin and to a certain extent is inoculable or auto-inoculable.

This disease can be cured by cataforesis in from one to three treatments, I use the cataforic electrode, or a piece of block tin cut out to almost cover the surface to be treated. To this I attach a piece of lintine extending about one-eighth inch beyond the borders of the metal. Saturate this lintine with a 10% solution of zinc sulfate and connect it with the positiv pole. Five to 10 milliampères, for about 10 minutes should be given every second or third day, according to the reaction. The trouble can be eradicated in one treatment, but the reaction is quite severe and I would never advize it. Terpene peroxid applied on lintine and coverd with oil silk, wil often cure the condition.

Iodex is very valuable, especially when used with powerful radiant light.

The quartz light is the very latest and best method to use. One, two or three treatments wil cure sycosis—depending on its location.

Barber's Itch can usually be cured in one treatment by the quartz light.

SYFILIS
(See Part One, Lecture XVIII)

S

TABES DORSALIS
(See Syfilis)

T

For treating Tabes Dorsalis, besides the outlined treatment for syfilis, one should use powerful radiant light energy—incandescent and quartz light—over the spinal area.

The pulsoidal current thru the feet, placing one foot in one dish of water and the other in another (Fig. 256) is very beneficial.

Another auxiliary mesure is that which relies chiefly upon the eyesight. This is probably best carried out by having the patient place his feet and toes on definit objects placed on the floor. These exercizes should be carried out systematically and not spasmodically. Also hav the patient step over objects of different heights. All these exercizes help cultivate muscular tactil sense as wel as co-ordination in connection with the eyesight.

TENIASIS
(See Worms)

TETANUS

The preventiv treatment is to immediately disinfect any suspected puncture. Probably the quartz light thru a suitable quartz applicator is the best preventiv mesure known.

For the treatment after tetanus has set in, there is not much that an offis specialist can do but turn the patient over to a general practitioner. Powerful radiant heat helps.

THROAT (SORE THROAT)

Ordinary sore throat is best treated by a gargle of plain salt and water, or a teaspoonful of alcohol to a tablespoonful of water, or a teaspoonful of peroxid of hydrogen to a tablespoonful of water.

Clear out the bowels wel with a saline laxativ.

Besides this, powerful radiant light energy with the incandescent light and quartz light combined is indicated.

Look for the predisposing cause. Clear up the system

T by fasting for twenty-four hours and then giv suitable diet.

Calcium sulfid is usually indicated in all cases of "sore throat."

THYROIDISM

(*See Goiter*)

TIC

(*See Corea*)

TICDOULOUREUX

Treat this condition by means of localized radiant light over the face. I hav found the quartz light is especially applicable in this condition.

Do not use alcoholic injections. They make the second condition far worse than the first.

Zone Therapy is often a great aid in ticdouloureux. Look for impingements on the nervs. If any ar found, try to remedy them non-surgically. Just as sure as one begins to cut about the nervs in the face they can keep cutting, because the cicatricial tissue seems to make matters worse rather than better.

Examin the teeth. See that there is no impingement upon the nervs thru a lawless root.

Ticdouloureux is probably one of the most difficult conditions that an offis specialist has to treat, but he can rely more upon localized quartz light thru suitable quartz applicators and powerful incandescent light energy than any other mesure.

Be careful to not cause any injury to the nervs by vibration or hevy massage. Remember that there is an impingement or pressure upon some nerv or there would not be this pain. Therefore do not ad insult to injury.

TONSILS, TREATMENT OF

Tonsilitis is discust in Part One, Lecture XXII. The general treatment of enlarged tonsils has also been mentiond, but right here it wil not be amiss to repeat that one of the best modalities for the treatment of enlargement of the tonsils is the Quartz Light, given thru the mouth and localized over the enlarged gland.

For *crypts* that ar fild with caseous matter, the treatment is to clean them out with a wire loop or small curet, after which paint the crypt with a 50% solution of triclorcetic acid or a 25% solution of silver nitrate. T

Many say they get just as good results without any local medication if they use the *Quartz Light* directly over the curetted crypt.

SAVE THE TONSILS! *Do not enucleate them! Treat them!* If necessary, open up pockets so there is free drainage, and in desperate cases shear off the protuberance. There is no more need of enucleating the whole tonsil because a small portion of it is at fault than there is in cutting off the hand because a finger is a fault.

Many of the so-cald "diseasd tonsils" ar not diseasd but simply over-activ. They can be treated and if treated properly can be cured.

Until one has used the *Quartz Light* over a hypertrofied or diseasd tonsil, they hav no idea what an efficient modality we now hav for treating this condition.

SAVE THE TONSILS!! THEY AR THE POLICEMEN OF THE THROAT!!

TOOTHAKE

Hav teeth examind by a competent dentist. Zone Therapy wil relieve Toothake better than any other agency that I know of. Also use powerful radiant light over the face—a portable lamp wil do.

Pressure on the mastoid or nape of the neck wil often stop toothake.

TREMORS, FUNCTIONAL

We meet with tremors of various kinds—those caused by neurasthenia and hysteria and senility. Another form is that known as hereditary or family tremor. I hav often diagnosed cases with this family tremor where the father and grandfather of the patient had the same tremor.

These tremors ar always more pronounst during voluntary motion or effort. They most often begin in the hands.

Whether there is any cure for this condition, I do not know, but I think there has been some improvement by the use of the pulsoidal current thru dishes of water.

T

TUBERCULOSIS

(*See Part One, Lecture XIV.*)

TUBERCULOSIS OF CERVICAL LYMFATICS

(*See Cervical Lymfatics*)

TYFOID FEVER

Altho Tyfoid Fever does not usually come under the relm of offis practis, yet I want to mention it because of the aid radiant light energy is in this disease. Often a lamp of from 500 to 1,000 candle-power can be instald at the bedside, and it helps wonderfully when radiated over the abdominal region.

It is not known by many that powerful radiant light wil reduce fever fully as much as cold water or ice.

Some claim that one-half to one grain doses of hydroclorid of emetin taken daily wil cut short an attack of tyfoid fever in three to six days. It is claimd that this remedy cannot possibly do any harm and therefore it is worthy of a trial.

ULCER, RODENT

Treatment the same as for Lupus Vulgaris.
(*See Skin Diseases.*)

U

ULCER OF STOMAC

(*See Gastric Diseases*)

ULCERS

Find out if possible the cause of the ulcers and treat the constitution accordingly.

For *varicose ulcers* radiations from the powerful incandescent lamp ar of great value. To these should be added radiations from the quartz light.

As a rule all ulcers can be best treated by means of the quartz light either by compression radiation or distance radiations, depending upon the lesion.

Elevate the leg all you can in treating ulcers in that location.

(*See Skin Diseases.*)

URETHRITIS, SPECIFIC

(*See Part One, Lecture XX—Gonorrea*)

URIN, RETENTION OF

(*See Prostatic Diseases*)

URINALYSIS

It is very important to test the urin before beginning the treatment of any patient. Altho many textbooks set forth very elaborate methods for testing the urin and some clinicians ar sticklers for a very elaborate examination of the urin, yet from practical experience, I can say that for the offis specialist as wel as for almost any other class of physicians, the simple and up-to-date mesures given below ar sufficient.

The Sample of Urin

If any wish to go into the testing of urin more fully and want the very best book on urinalysis and especially the microscopic analysis of urin, I would recommend the latest edition of Dr. Louis Heitzmann's *Urinary Analysis and Diagnosis by Microscopical and Chemical Examination*, publisht by William Wood & Co., New York City. As I hav had the plesure of studying under Prof. Heitzmann, I can recommend his works and teaching to anyone who wishes to go deeply into this subject.

Never attempt to base any conclusion upon any sample of urin unless it is taken from a twenty-four hour sample. The proper way to instruct the patient regarding this sample is to tel them to commence, at, say eight o'clock one morning, and save all the urin they pass *until* eight o'clock the next morning, keeping the urin in a coverd vessel. Tel them to wel mix the whole twenty-four-hour supply of urin, mesure it, and bring you a four-ounce bottle ful of that mixture. There wil be many patients who wil bring a "pail ful," but it is better to hav a quart or two brot than to not hav the specimen that you examin a part of the twenty-four hour sample.

The specific gravity of urin should be taken at the correct temperature. Otherwise it is of very little value.

Determination of Solids

For all practical purposes the amount of solids voided can be approximately determind by multiplying the last two figures of the specific gravity by the coefficient of Hae-

User, which is 2.33. This givs the number of grams of solid matter in 1,000 mils (c.c.) of urin. This number multiplied by the number of mils past in twenty-four hours and divided by 1,000 wil giv the amount of solid constituents eliminated during that time. Average is about 70 grams.

Albumin

Probably the most simple and at the same time one of the most accurate methods of determining albumin in the urin is by means of the *"Albumoscope,"* or what is otherwise known as the *"Horismascope"* illustrated in Fig. 406. This is a cold nitric acid test which I find to be very accurate.

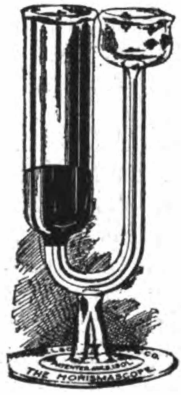


Fig. 406. The Albumoscope or The Horismascope, Nelson, Baker & Co., Detroit, Mich. A convenient and accurate instrument for detecting albumin in the urin. Cold H NO_3 is used for the reagent.

Fig. 407 illustrates the use of this instrument. Urin is poured into this instrument until it is as high as the top of the capillary tube. Then from a dropper bottle, C. P. nitric acid is pourd into the capillary tube, until it rises a little distance against the asfaltum reflector on the horismascope. The faintest trace of albumin wil show as a white line between the acid and the urin.

To determin whether this albumin is true albumin or nucleo-albumin, the "salting out" method of Purdy is probably the best.

Remember that albumin in the urin doesn't always U intimate a nefritis. Albumin may come from pyelitis, cystitis, prostatitis, urethritis, or vaginitis. To determin the source of the albumin a *microscopic examination* is imperativ.

Determination of Sugar in the Urin

For this purpose the instrument known as the *"Saccarascope,"* shown in Fig. 408, as wel as the *"Einhorn*

Fig. 407. Illustrating the use of The Horismascope.

Fermentation Saccarometer" shown in Fig. 409, ar probably the best. Probably the Saccarascope is the more accurate of the two for determining the amount of carbon dioxid gas generated from the fermentation. The principle upon which the saccarascope works is the same as that upon which the saccarometer works.

Fig. 410 shows the incubator I use for fermentation tests. It is the only safe method of testing the yeast and urin mixture.

U Remember that sugar in the urin does not always indicate diabetes mellitus. Other symptoms must also be present before making a diagnosis of diabetes mellitus. Nevertheless, I do not know as a person can hav diabetes mellitus without showing sugar in the urin. Therefore it is a test that should always be made so that diet and treatment may be governd accordingly.

If a person livs *solely* on vegetables for two weeks and drinks only plain water and his urin stil shows sugar, the case can safely be diagnosed as *Diabetes Mellitus*.

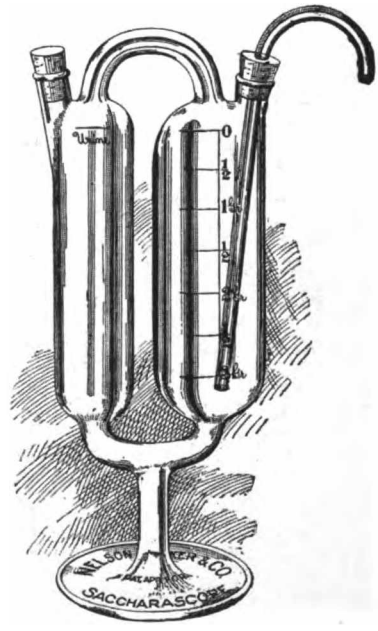


Fig. 408. The Saccarascope. Nelson, Baker & Co., Detroit, Mich. A convenient instrument for detecting sugar in the urin, at the same time determining the quantity present.

Reaction of Urin

For determining the reaction of urin, I think the most simple and practical instrument is the *Acidometer* put out by the Abbott Laboratories of Chicago. It consists of a specially graduated test tube into which 10 mils of urin ar placed and one drop of a solution of fenolthalin indicator. Decinormal sodium hydroxid is added to this urin until the

indicator shows a pink color. Then the amount is red off from the graduated tube and that shows the approximate acidity of the urin in terms of N/10 Na OH. It is of the utmost importance to know the reaction of the urin, and if acid, the amount of acid in it. Normal urin wil show about 25 by this acidometer test.

For *reducing the acidity* in urin, I know of no single remedy that can compare with *sodoxylin* manufactured by the Abbott Laboratories.

If the acidometer shows acid as high as, for example 50, I put the patient immediately on a strictly vegetable diet,

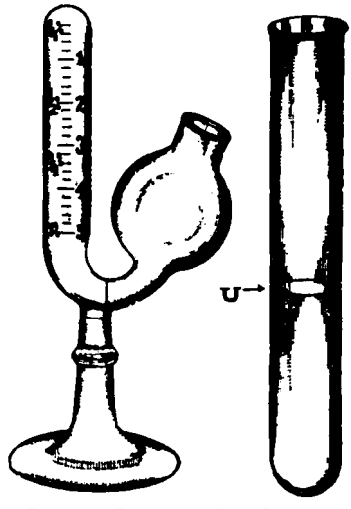


Fig. 409. *The Einhorn Fermentation Saccarometer.* Urin is pourd into tube up to line "U." Then ad about one gram of comprest yeast and *shake thoroly.* Empty the contents of the tube into the saccarometer, being careful to so tip it that no air bubble is left at the closed end. *All air must be replaced by the urin-yeast mixture.*

Place in an incubator at a temperature of about 88° F. and leave it there for at least 12 hours. If sugar is present in the urin, CO_2 gas wil push the fluid down and the % or volume of CO_2, wil indicate the amount of sugar in the urin.

instructing them to drink plenty of distild or spring water, and giv them a dessertspoonful of sodoxylin dry on the tung to be washt down with a glass of water about fifteen minutes before each meal. At the same time I take mesures to hav the bowels wel regulated.

U As a rule, within one week the acid test of the urin from such a patient wil be down to 25.

Remember that the *quantity* of urin has a great deal to do with the amount of acidity in it. An acid test of 50 with 500 mils of urin of course is no more than an acid test of 25 with 1,000 mils of urin.

Irritable bladder and frequent calls for micturition ar often caused by too concentrated urin or urin that is hyper-acid.

The diagnostic card illustrated in Part One, Lecture XIII shows a very simple manner of recording these sample-urin findings. For all practical purposes, the tests given abov ar sufficient.

Fig. 410. The Electric Incubator I use for fermenting yeast and urin mixtures. This is accurate to within a small fraction of a degree.

URINARY SYSTEM, DISEASES OF

In all diseases of the urinary system powerful radiant light—incandescent and quartz—is indicated. This light should be radiated over the abdomen and over the perineum, also over the back and especially over the lumbar and sacral regions.

Regulate the diet according to what the condition is.

Oxygen-vapor inhalation and B-D-C therapy ar also very beneficial in this condition.

For retention of urin apply hot cloths wrung out of eucalyptus water over the perineum and lower abdominal regions. Keep these stupes on continually and allow the patient to hear running or pouring of water. This is often more effectual than passing the catheter. U

The magnetic wave current is indicated in all nefritic conditions. It seems to hav a selectiv action in stabilizing this unstable condition.

(*See Prostatic Diseases.*)

URINARY SYSTEM, GONORREA OF

(*See Gonorrea, Part One, Lecture XX*)

URINARY SYSTEM, SPECIFIC URETHRITIS OF

(*See Gonorrea, Part One, Lecture XX*)

URTICARIA

Urticaria, otherwise known as nettle rash or hives, is a senso-motor neurosis of the skin. The etiology is often obscure, but the condition is a very good indicator of some toxemia, and it usually comes from an *intestinal toxemia* caused by overeating, or by eating certain foods that do not agree with the person. Many times *clothing* that does not permit the skin to eliminate wel is an etiological factor.

I hav found that the rays from the 3,000-candle-power lamp applied over the affected area, as wel as electric light baths, ar almost specific.

Actinic rays ar very beneficial.

Hygienic mesures must always be put into force, and these include a thoro clensing of the bowels and keeping them open, along with tepid *magnesium sulfate baths*. About one-half pound of commercial epsom salts to a small bath tub of water is the proportion. With some patients a very hot or cold bath aggravates the condition and therefore the *tepid bath* is the one to prescribe.

UTERUS, INFANTILE

Sometimes dysmenorrea is caused by an infantile uterus. For this condition I use the pulsoidal current for about 5 minutes. This I follow with interrupted negativ

U galvanism, 30 milliampères for 2 minutes, and the remainder of the 10 minutes' treatment I divide up between the slow, superimposed, and the surging sinusoidal currents. In many cases an infantile uterus can be made to develop to normal size after a few weeks of daily treatments as abov specified. I use my special vaginal electrode for this.

In all these uterin conditions, unless one is using tampons, an antiseptic, hot water vaginal douche is indicated. For this purpose there is nothing better than a powder containing the sulfo-carbolates of zinc, which is manufactured by the Abbott Laboratories under the name of *Vaginal Antiseptic*. If nothing else is at hand, a teaspoonful of sodium clorid, one-half teaspoonful of borax, and one-half teaspoonful of alum to the pint of water is very efficient. I advize these douches to be taken every evening just before retiring. Use water as hot as can be borne.

The douche syringe I recommend is illustrated in Fig. 400.

(*See Dysmenorrea.*)

V VAGINAL SYRINGE

For a vaginal douche syringe, I advize only an all-soft-rubber syringe which plugs the vulva so the water can be forst into the vagina and open up all the folds, after which it is drawn back into the syringe by the action of the elastictiy of the rubber bulb. Never prescribe a vaginal syringe with a hard rubber nozzle as that is liable to injure the cervix.

The kind of syringe I hav found to be the best is illustrated in Fig. 400.

VAGINITIS, SPECIFIC

(*See Gonorrea, Part One, Lecture XX*)

VAGINISMUS

Many neurotic conditions, especially in young unmarried girls, ar caused by a contracted hymen. If, on examination, we find the hymen very tuf and unyielding to the wel lubricated index finger, it is wel to dilate it fully.

For this purpose I use the fingers, or the same dilator as we would use for dilating the rectum. I use the rapid

sinusoidal current as strong as can be borne. Connecting the dilator electrode with one pole and having the other pole connected with the pad over the abdomen, is very effectual. Stedy pressure should be made upon the dilator and in many instances the unyielding hymen can be stretcht as much as necessary without causing any rupture, which some foolishly object to.

(*See Hymen.*)

VARICELLA

(*See Chickenpox*)

VARIOLA

(*See Smallpox*)

VERTIGO

(*See Hedake*)

VISCEROPTOSIS

(*See Splancnic Insufficiency*)

VITILIGO

This is a diseasd condition of the skin which is attended with smooth, light-colord patches. It occurs in youth and adult life. The condition is also cald leukoderma.

The best modality for treating this condition is the quartz light. Nothing can compare with it.

To bring about a good cosmetic effect for the face and hands, one must use quite a good deal of skil to bring the pigmentation up to the right color.

(*See Skin Diseases.*)

VOMITING

(*See Gastric Diseases*)

WARTS AND CORNS

Warts and corns ar easily cured by electrolysis, using 10% solution of *zinc sulfate* cataforically, or by means of a zinc needle. If the wart or corn is elevated, put the zinc needle into the elevation on a level with the epidermis. From

W 5 to 10 milliamperes of current for about 10 minutes, repeated every third day for three or four treatments, wil generally be sufficient.

For a corn, it is wel to use a compress of 1% zinc sulfate the night before giving this treatment. The same procedure should be followd for a very large, horny wart.

Salicylated collodion, mentiond under the hed of Callositas, is often very beneficial.

Quartz Light therapy can be used to good advantage in treating warts or corns. For this purpose a small, localizing applicator is used. Fulguration can also be used to advantage.

Focust Sunlight, condensing the sun's rays thru a suitable lens is also a reliable method for killing warts and often corns.

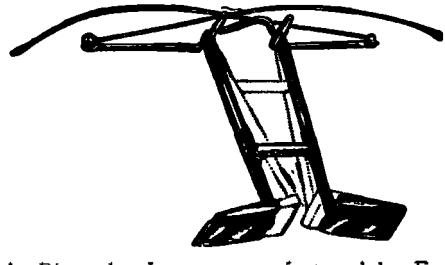


Fig. 411. Hardy Binocular Loupe, manufactured by F. A. Hardy & Co., Chicago, Ill.

Often a few drops of milk from the poppy plant, applied daily, wil remove a wart within a week.

Hairy Warts

Many times an offis specialist has hairy warts to treat. The tecnic is to destroy the wart by electrolysis. If the wart is in a position that does not require its removal, the hairs could be taken out by electrolysis as described under the hed of Electrotherapy.

In doing depilatory work of any kind, I advize the use of a binocular loupe. The kind I like is shown in Fig. 411.

Some forms of hairy warts can be destroyd by means of the quartz light, using the compression radiation. This wil not kil the hairs however, but they can be taken out by electrolysis.

With this infectious disease there seems to always be found the Bordet-Gengou bacillus, which is a small coccobacillus resembling the bacillus of influenza. Whether this bacillus is the *cause* or the *effect,* I do not pretend to know. If the bacillus is the cause, we would all like to know where the bacillus comes from. This holds true of all diseases said to be *caused* by such and such a micro-organism.

As the *sequellae* of whooping cof ar often so serious, to say nothing about the tremendous mortality of whooping cof in children, I want to mention a common sense method of therapy that has been proved to be very beneficial.

Radiations from the powerful incandescent lamp, with or without the quartz light, along with oxygen-vapor inhalation ar of great value—some claim "specific."

Inhalations of "eucalyptus steam" (10 drops of eucalyptus oil to the pint of boiling water) is excellent.

Nebula from the "Best Ever Nasal Spray," as mentiond under the hed of Ear, Nose and Throat, is also very beneficial. If too strong, dilute it with pure hydro-carbon oil.

Internally use Abbott's Calcidin, Calcium Sulfid, and their special formula for Whooping Cof. Keep the bowels open with Podofyllin and Salithia.

If you ar so fortunate as to understand Homeopathic prescribing, use the indicated remedy.

Zone Therapy has been proved to be very efficacious in the treatment of whooping cof. I hav reports from reliable physicians who claim to hav caused the paroxysms of coffing to cease after two or three Zone Therapy treatments.

If a child is strangling during these paroxysms of coffing, be sure to take them by the feet and hold them for a moment with the hed downward. If necessary, spank them at the same time, the same as you would a new-born child that does not breathe deeply enuf. This often enables the child to throw quantities of mucus from the throat which might be taken into the lungs and either strangle them or cause neumonia.

Because of the prevalence and gravity of whooping cof, I giv the following from the Monthly Bulletin of the Department of Helth of New York City under date of

W November, 1917. This report is from the Chief, Division of Baby Welfare, Bureau of Child Hygiene.

In spite of the havoc which whooping cof causes among infants and children, a large part of the laity and many physicians stil fail to grasp its seriousness. There ar yet altogether too many who, like the European pesants, believe that every child must hav whooping cof, and that the disease "continues until it stops."

The mention of smallpox, diftheria, scarlet fever, and kindred diseases, strikes terror into the brests of parents, while whooping cof, which collects a toll of thousands of deths annually, to say nothing of its maiming sequellæ, is past by with an indifference which is astounding. As Rucker says: "Any disease which kils ten thousand children per annum is a serious one. If bubonic plague wer to kil that many children in the United States in one year the world would quarantine our country. A child ded of whooping cof is just as ded as a child ded of plague."

Statistics compiled by Morse from the United States Public Helth Reports show that comparativ deth rates per hundred thousand ar as follows:

Whooping Cof	11.4 per cent.
Scarlet Fever	11.6 per cent.
Measls	12.3 per cent.
Diftheria	21.4 per cent.

He states, furthermore, that 94.5 per cent. of the deths from whooping cof in the United States is in children under five years of age, as follows:

Under one year of age	57 per cent.
In the second year	23 per cent.
In the third year	8 per cent.
In the fourth year	4 per cent.
In the fifth year	2½ per cent.

It is, therefore, seen that the mortality from whooping cof is higher in those of tender years—being more than twice as high under one as between one and two; and more than five times higher under two years than between two and five. If, to these statistics, we ad many of the reported deths from bronco-neumonia supervening on whooping cof, the mortality from the latter would be stil larger.

Worms often cause many of the neurasthenic conditions that the fysical therapeutist meets. Many of the insidious "crawling sensations" that patients complain of ar caused by very small worms located in the lower rectum.

It matters not under what name the intestinal worms go, this is one condition where the *worm* should be treated and not the patient.

For internal medicament probably *"taenicide,"* put out by the Abbott Laboratories, is the best. The literature that comes with this preparation is so complete that there is no need of saying anything about it here.

Santonin along with *Podofyllin,* both put out by the Abbott Laboratories, ar also very beneficial, especially for children.

Many times *Thymol* along with *Sulfocarbolates,* is very efficient in treating lumbricoides.

Probably seat or thred worms (ascarides) ar very quickly and redily eradicated in an adult by injecting into the rectum from 1 to 4 ounces of coal oil (kerosene), using a glass or hard rubber syringe. If the first treatment does not prove sufficient, repeat the dose every third night, washing out the bowel with a soapsuds enema or, what many times is better, an infusion of quassia, prepared by soaking *one ounce of quassia chips in a pint of cold water.* A soap suds made from carbenzol soap is very good.

For the *irritation* that is often caused about the anus because of the pruritus that goes with the condition, the *Quartz Light* is without doubt the very best modality. Altho there ar many other methods of treating it, this Quartz Light, thru suitable lenses, is so far in advance of any other method that there is no comparison.

Iodex suppositories ar also very helpful.

One remedy that is used very successfully by a great many is *turpentine,* 5 to 10 drops in milk or on sugar, taken on an empty stomac three mornings in succession. The patient must drink quantities of water when given turpentine. I would not advize the use of turpentine if any of the abov remedies ar at hand, because of its irritating effect upon the kidneys, but if the patient drinks a large amount of water it appears to lessen the irritation in the kidneys.

W For *tapeworm,* insted of using "taenicide" abov mentiond, some use three teaspoonfuls of the oil of turpentine taken in milk with about two tablespoonfuls of castor oil, after a 24-hour fast.

No matter what kind of intestinal worms you ar trying to eradicate from the intestinal tract, never neglect to keep the bowels wel open. For this purpose podofyllin, castor oil, epsom salts, milk of magnesia (Phillips), or salithia (Abbott) ar probably the best.

WOUNDS

Open Wounds

Nowadays we hear a good deal about certain irrigation methods for open wounds. Many various solutions ar heralded thru the press as great discoveries in the treatment of wounds. These ar "hysterical times" and almost anything from certain sources is publisht and proprietary medicin manufacturers jump at the chance of "getting in line" with the hysterical populace.

Keeping the wound *clean* is all that nature requires. In fact nature wil do a great deal toward that if foren bodies ar removed. Many of the solutions that ar so widely publisht ar in reality *nothing more than steril water.* In fact steril water, as far as I can lern from observation, experience and information from those of very wide experience, is perfectly effectual in keeping a wound in good condition.

It must be true that if any antiseptic solution of strength enuf to kil bacteria is used in an open wound, it wil prevent the healing of the wound, or if not prevent it, retard it very much.

The object of irrigation is to wash off foren bodies or floating particles in the air, bacteria or moulds, so they wil not gain a nidus there. If the patient's resistance is kept up to par and is not run down by tobacco, liquor, and vicious living, nature wil rapidly do her part.

Powerful radiant light energy, and especially the *quartz light,* is indicated for an open wound or wounds of all kinds more than any other modality.

Infected wounds ar best treated by autotherapy. At least that is the best *"first aid."* Sucking the wound and swallowing the saliva, altho it may sound a little obnoxious, has nevertheless been proved to be one of the greatest boons for

the victim of such a lesion. The reason for this is thoroly discust in Part Five, Lecture IV—Autotherapy. W

The next best method for infected wounds is to kil the offending micro-organisms. To do that by any washes, one has to use solutions so powerful as to delay healing, yet it is often a necessary mesure. If, however, one has the *quartz light,* they can destroy the surface micro-organisms and stil not delay the healing process. In fact, healing seems to take place more rapidly if the wound has been rayd by the quartz light.

Ulcerated wounds ar to be treated the same as infected wounds because all such wounds ar infected.

X-RAY DERMATITIS X

For x-ray dermatitis radiations from the powerful incandescent lamp is probably our best remedy. Some say they ar getting better results by also using the quartz light.

(*See Skin Diseases.*)

PART TEN

THE AURA
PSYCO-MAGNETIC RADIATION
OR MAGNETIC ATMOSFERE

DEFINITION

Aura is a manifestation of the rate and mode of motion from a living body—animate or inanimate. In other words, it is *the manifestation of the rate and mode of motion of vital force.*

Aura is not seen by itself, but on contact with the surrounding energies of air or magnetic currents. That is, an *interference* of energy makes the psyco-magnetic radiation visible.

PROPERTIES

The rays (Auric Rays) from this magnetic atmosfere change direction and appearance when the subject or living object is turnd from east or west to north or south or vice versa. These psyco-magnetic radiations ar governd by the same laws as govern magnetism or electrical currents.

The magnetic atmosfere changes directly with its source. That is, if its source changes in any way, the magnetic atmosfere about it also changes.

This magnetic atmosfere is only somewhat luminous and therefore cannot be redily discernd in a bright light, because the rate and mode of motion of a bright light is so great that it interferes with the outward manifestation of this magnetic atmosfere. This is on the same principle as that a very bright light makes a dim light invisible.

The aura, psyco-magnetic radiation, or magnetic atmosfere, being a rate and mode of motion must, according to the fundamental laws of fysics, be influenst by every other rate and mode of motion.

Inasmuch as thot is a product of activity, then thot must be a rate and mode of motion. Consequently the psyco-

magnetic radiation must be influenst by thot as wel as by any other rate and mode of motion.

Inasmuch as *helth and disease* ar manifestations of a natural or unnatural rate and mode of motion, then it follows that these psyco-magnetic radiations must be influenst by helth differently than they would be by disease.

Inasmuch as *temperament* is a manifestation of a rate and mode of motion, then this magnetic atmosfere must be influenst by temperament.

Inasmuch as a *person's ego* is the result of helth or disease, or the result of temperament or environment, and inasmuch as the ego is the personification of the cosmic influences that hav from time immemorial shaped this particular ego, then the rate and mode of motion which is inherent to this particular ego must be manifested in the magnetic atmosfere of this particular ego to make it caracteristic of the ego.

In other words, *no matter what form life or vital force may take, no matter what vehicle life is carried in—be it animate or inanimate—its magnetic atmosfere must be a caracteristic of the vehicle.*

When we thoroly understand the definition of aura, psyco-magnetic radiation, or magnetic atmosfere, and then thoroly understand its properties, we can redily see that in this magnetic atmosfere we hav an exact image which represents the product of the sum total of the development and evolution of life.

I hav purposely used three terms for the manifestation of vital force. Very many other terms hav been used for this, but *aura, psyco-magnetic radiation, or magnetic atmosfere* all signify the same manifestation. One term seems to fit some living objects better than others. For example, the word "aura" can mean the manifestation of vital force in animate and inanimate objects, and the same can be said of the term "magnetic atmosfere"; but the term *"psyco-magnetic radiation"* is the best for signifying the magnetic atmosfere or aura of a living *human* being.

This term was used by that far-seeing and wonderful filosofer, Dr. Edwin D. Babbitt. He uses it in his work entitled, "The Principles of Light and Color." In this connection he says:

"The finest potency of all of which we can avail ourselvs in the external world comes from the sunlight, the

only known element which transcends it in fineness being the *psyco-magnetic radiation* from highly organized human beings.

"By understanding the etherio-atomic law, we see at once how all things must incessantly radiate their peculiar essences and ethers, all ethers partaking more or less of the substances thru which they pass, the finest substances having the finest emanations."

Altho Dr. Babbitt's intuition was really "superhuman," yet it can be redily seen that he reasond far in advance of his time and in just this one sentence he really givs the *kernel* of what I hav alredy said regarding the definition and properties of the magnetic atmosfere.

General Discussion

I know that it is customary to hav the general discussion precede all else in a subject like this, but I purposely gave the definition of the name and the properties of the subject under consideration before giving the discussion.

Inasmuch as this subject is lookt upon by so many scientists as being "imaginary," "subjectiv," "etheric," "vaporic," etc., I am purposely leading up to the discussion and illustration of this subject as carefully and scientifically as I possibly can. Because certain cults or faddists hav had a good deal to say regarding the aura and in fact some hav based their religion upon the manifestation of the aura, is no sign that the subject is not wel founded.

Modern day living with its resulting bustle, and working so hard to make a living that we hav not time to liv, has changed our *natural* intuition or perceptions so that the finer properties of nature ar lost from our view. We hav evidence in ancient history and in the paintings of our oldest masters that they discernd in life what we now call the magnetic atmosfere.

Many persons can feel the psyco-magnetic radiation tho they cannot see it and even dispute its existence. The existence of this psyco-magnetic radiation is what some call the *sixth sense*. I wish I had time to write a volume of several thousand pages giving proof that there is such a sense as the *sixth sense*, as wel as giving proof that there is such a manifestation as the aura, psyco-magnetic radiation or magnetic atmosfere. Let me giv one or two examples.

You walk down a lane along which ar many trees, some of them large trees, you pass street abutments as wel as other view-obstructors. You pass them all without thinking anything about them, but suddenly, when opposit a certain one you stop, or show in your step that there is a change of resistance in your muscular movements. If you ar inclined to ascertain *why* you had this change of resistance come over you just then, you look behind the tree or abutment and there you see someone watching you—perhaps a thief. You did not see this person, neither did you smel him, nor hear him. What caused this change of resistance in your muscles? Why did you not hesitate at some of the other view-obstructors? Here is the reason. *Because the magnetic atmosfere from that individual was of a nature that interfered with the magnetic atmosfere from your own body.* It telefoned to your subconsciousness, and thru your subsciousness your musculature response was changed.

Another example—You sit in an audience of hundreds or thousands of people. Somehow you hav a feeling that you want to look in a certain direction even if you hav to twist your neck to do it. You look and find your eye meets the stare of someone who is focusing their gaze upon you. Why did you look around? What gave you this feeling? You neither saw this observer, nor did you smel him, but his radiation interfered with your radiation and thru your subconsciousness you involuntarily directed your eyes in his direction.

Some call this property "instinct." I care not under what name it goes. It is an *interference of energy*—the interference of a psyco-magnetic radiation communicated to you thru your subconsciousness.

Again how often we hear or experience such authentic circumstances as the following: You wake up at a certain hour in the night with your mind centerd upon some one whom you know, even tho he or she is 3,000 or more miles away. You fancy that this person has met with some accident or is sick or something has happened to them. You cannot get your mind off of it. When the morning comes, you receive a telegram stating the very condition has taken place that your subconscious condition pictured. Do not say this is a coincidence. Do not say it happens so seldom that it is negligible. It is not so. I know of so many such instances that I could fil volumes relating such narrativs. Only

recently such an occurrence was related to me and I proved it to be true—where something happend to a person "over there" at the same time that some one here had a vision of it.

What caused this? The people did not see 3,000 to 6,000 or more miles away. How did they know it? It is by the projection of this same atmosfere, but in a different form. It is influenst by thot and is the very soul or spark of vitality.

In *subhuman* animals we call this faculty an *instinct*, but there must be some fysical way of explaining an instinct. You wil say that an animal has a super-sense of smel whereby it can detect some of these things, but I can tel you that by actual experimentation we hav been able to so mask the sense of smel that the animal could not tel anything by that faculty and yet would find what they wer directed to find. Ordinarily they would do it by their highly developt sense of smel, but we hav found that many animals hav a sense more sutl than that of smel.

To those who do not believe anything they cannot work out in the laboratory, or cannot see with the microscope or analyze, I can say that there is more beyond the microscope than the microscope has ever found or ever wil be able to find. The distance beyond the range of the most powerful miscoscope is as great in relation to the Infinit as the space beyond the vision of the most powerful telescope. Because we fail to see things is no reason why we should be so narrow as to not realize that there is much more beyond the microscope or the telescope than we have yet dreamd of.

Can the materialist who wil believe nothing he cannot find out in a fysical way tel how a dog can find his master's footsteps in a crowded street among thousands of other steps? He must admit that there ar manifestations or elements which ar far beyond our understanding and far out of reach of any chemical or microscopical analysis.

Because there hav been false profets or soothsayers or magicians or whatever name they go under who had a smattering of the magnetic atmosfere and imposed upon credulous people, is no sign that their art is not wel founded. Once I askt a magician why he used certain shadow illusions. He said he knew they really existed but because the majority of people could not see *them*, he had to fake them.

Again we hear some scientists say that a person who can observ the magnetic atmosfere is abnormal and there-

fore his judgment is not to be trusted. I should like to ask what is the criterion for a normal individual? Would it not be better to say that *the normal individual is capable of observing the magnetic atmosfere* or the psyco-magnetic radiations but, owing to disuse atrofy, this "seer's sense" has been stunted so that those who ar not able to observ it ar abnormal?

The "majority rules," but it does not make it true that if the majority commit murder that murder is right. There must be a higher and more profound definition of the word "normal." I understand that if we analyze the blood of one hundred people and they ar all about alike except one, we say that one is abnormal, but because we hav accepted this theory as being correct does not make it correct. The blood of that one might be the normal and the ninety-nine be abnormal.

I could go on indefinitly giving illustrations, but it would get us nowhere. I shal now try in a brief and scientific manner to outline a method whereby those who so desire can cultivate the sense or faculty of observing this magnetic atmosfere. Unless you hav that faculty born with you, do not think that you can at once see the psyco-magnetic radiations mesuring eight feet or more from the living body with as many varied curvs and colors as there ar changes in the individual; but be content if you can see *any magnetic* atmosfere at all. You would not expect to be an accomplisht violinist at your first attempt. Neither should you expect to see all there is in the microscopical field the first time you look thru a microscope, nor to observ all there is in the telescope's mirror at your first glance.

That this study is a profound one, there is no doubt but the reward is wel worth the labor.

In giving the historical sketch of the development of my Bio-Dynamo-Chromatic work, I hav mentiond something about my erly observations of aura, but to make this lecture complete, I wil repeat and illustrate some of these erly observations, and by so doing many of my readers wil be able to observ the same fenomena. Once the appetite is whetted, it wil be a long time before it is satisfied.

The illustrations given to depict the different fases of this work ar very crude from the *seer's* standpoint. Insted of showing countless waves and changes of colors, I hav drawn dots and dashes to illustrate this magnetic atmosfere.

From the standpoint of a *teacher,* this plan is better as it is more in keeping with what the beginner wil see, and therefore he is not discouraged at the very beginning of the study. This work is too vast to go into at all deeply in this book, so I shal giv my erly observations and the fundamental principles underlying the work, coupling it as much as possible with actual laboratory findings.

The drawings I hav made in outline, rather than filling them in, for two reasons. First, it is much easier and second, by using figure outlines only, I am able to center the atten-

Fig. 412. Showing a bluish magnetic atmosfere about a sleeping cat.

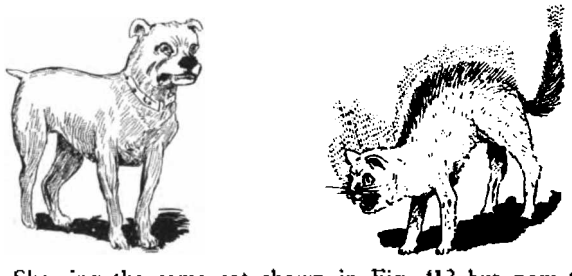


Fig. 413. Showing the same cat shown in Fig. 412 but now the bluish atmosfere is changed to red, because she is annoyd by the dog.

tion of the reader upon the very essence of this subject—*the psyco-magnetic radiation.*

Every student of this magnetic atmosfere is advized to thoroly read over Part One of this book before reading this Part Ten.

Erly Observations

My first recollection of seeing what I now know was the magnetic atmosfere was when observing a cat lying in front of the fireplace. The fireplace being dark and the

light just right, I observd around the light-colord cat a peculiar emanation and I remarkt that the cat lookt bluer than usual. Just then our dog came up to tease the cat. The cat bristled up and the blue emanations wer changed to red. This is grafically depicted in Figs. 412 and 413.

The next of my erly observations was the magnetic atmosfere or radiations from a pair of pigeons that wer "making love" to each other. The way these emanations appeard is shown in Fig. 414. It wil be notist that they *meet each other*—ar attracted to each other—but if these pigeons wer antagonistic to each other the emanations would not meet, but would *repel each other* as illustrated in Fig. 415. Fig. 415 also shows how the emanations, instead of going upward at right angles from the source of emanation ar bent in a curvd line. That is because the pigeons ar facing north or south.

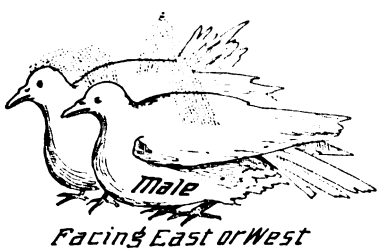


Fig. 414. A pair of Pigeons facing East or West. Notis how the emanations ar *attracted* to each other. This shows that the pigeons ar "mated" or in harmony with each other. Wer they antagonistic to each other, the radiations would *repel* each other.

It was many years before I could formulate a reason for these emanations at times being at right angles to the source while at other times they wer curvd. The strait radiations begin to curv as soon as the source of emanation (in an animal) turns from east or west to north or south. When the source is facing exactly north or south, the maximum curv is shown, and then the curv tends toward a strait line as the source again faces toward the east or west. The fysics of this is fully explaind in Part One.

Another observation I wish the readers to make is that in Fig. 415 the radiations from the body of the pigeons ar much coarser than they ar in Fig. 414. The reason is this.

The pigeons in Fig. 414 ar "mated" and their emanations ar attracted one to the other—unlike poles attract. These pigeons being mated ar *in harmony with each other,* the male giving off energy of one polarity and the female giving off energy of another polarity. Therefore the "granules" of which these radiations ar made up ar fine and attracted to each other. In other words, they *coalesce.* Notis that they emanate from the hed as wel as from the part of the anatomy which represents the organs of generation.

Do not misapprehend this Fig. 414. I hav exaggerated this particular radiation of the "mated" pigeons for a special reason, and I hav not shown the radiations from the whole body altho the magnetic atmosfere does surround the whole bird, being sharply defined over the organs of generation.

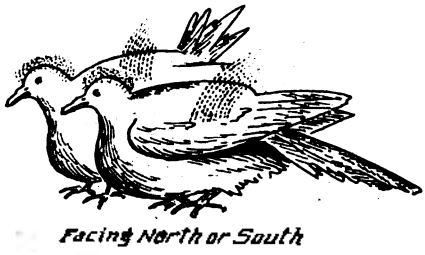


Fig. 415. A pair of pigeons facing North or South. Notis the curv of the magnetic atmosfere. Also notis that the radiations *repel* each other.

To make Fig. 415 in conformity with Fig. 414 and to show the contrast, I hav shown these granules in the radiation more coarsely divided and hav also shown them as coming from the same region altho in reality the whole body of the bird is surrounded by the magnetic atmosfere.

If, for example, the male wer trying to "make love" to the female and the female wer not at all inclined toward the male, the radiations would show very markt from the region of the organs of generation of the male but would not show from those of the female, while if the female had the same inclination as the male, the radiations from the organs of generation of the female would show in direct proportion to her inclinations.

I mention this in particular regarding the pigeon, but *what is true of the pigeon is true of every living animal*—human or subhuman.

One of my next erly observations was the magnetic atmosfere surrounding the buds of trees and flowers. One of the most beautiful sights and worth one's cultivation of the "seer's sight" is to see an orchard in bloom on a moonlight night when there is just enuf light to see this magnetic atmosfere around each bud and each bloom like an aureola of varied odic colors.

(*Odic color* in this sense signifies a color such as is seen in the magnetic atmosfere, cald by some "etheric colors." Altho lexicografers designate an odic color as "hypothetical," yet from the way I use the word, it is not hypothetical but a reality. It is what some writers refer to as the "colors beyond the visible violet in the spectrum.")

Fig. 416. Showing the magnetic atmosfere radiating from a rose bud and one opend.

Fig. 416 I hav drawn to illustrate how this magnetic atmosfere appears to me when the living rose is placed against a black background. It wil be notist that the radiations from the bud ar from the tip outward, while from the open rose they ar in the form of an aureola, the most markt radiations being parallel to the central petals.

Many conditions influence the radiations from a flower. If certain flowers ar near other flowers, the radiations seem to be antagonistic and repel one another while with other flowers the radiations coalesce in fine granules. This is a very peculiar and interesting fenomenon and I believe the reason is entirely fysical.

As years went by and I lernd more and more of fysics I found that there was a fysical reason for all the fenomena that I had discernd for years in the magnetic atmosfere.

Auric Rays From the Fingers and Their Interpretation

In Part One, Lecture VIII, I discuss the polarities of the hand. This study of the hand has helpt me to interpret many of the peculiar fenomena notist in studying the *auric rays* from the fingers.

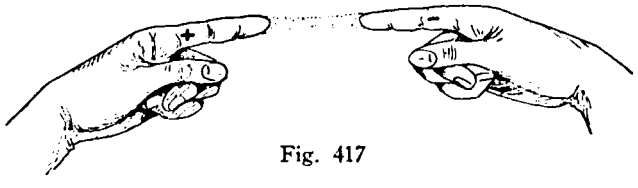


Fig. 417

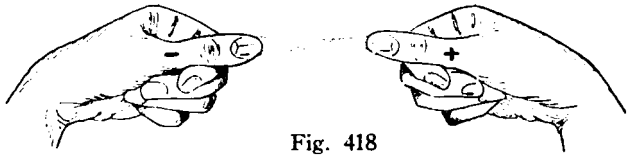


Fig. 418

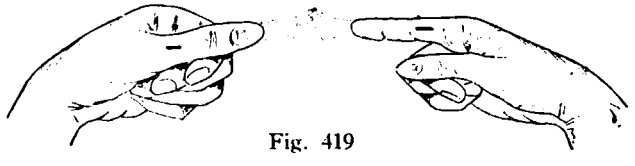


Fig. 419

The Auric Rays from the fingers, Figs. 417 and 418, show the Auric Rays coalescing in fine granules—unlike poles attract each other. Fig. 419 shows the Auric Rays repelling each other—like poles repel each other.

Probably the best way for a novis to practis seeing auric rays is to study the rays from the fingers. As static electricity appears to gather and shine brighter on points, so does the magnetic atmosfere seek points. The laws governing the auric rays ar almost identical with those governing static electricity.

These auric rays appear to be the auric atmosfere "leaking" off at certain points or parts of the body. It is wel known that if a person is insulated and charged with static electricity there will be static rays emanating from

the fingers or toes, elbows or nees, nose, chin, ears or hair if some *"capacity"* or ground comes anywhere near these parts. It is for that reason that the fingers ar of great utility in studying certain auric fenomena.

Figs. 417, 418, and 419 illustrate some fenomena connected with the auric rays. The fenomena here represented ar fundamental in all manifestations of psyco-magnetic radiations or what is better named in this connection, *auric rays*.

As has been fully explaind in Part One, Lecture VIII, if the index finger of the right hand is negativ, the index finger of the left hand is positiv. If the thum of the right hand is positiv, the thum of the left hand is negativ. If the fingers of the right hand ar negativ, the thum of the same hand wil be positiv. The plus and minus signs shown on the fingers in Figs. 417, 418, 419 illustrate this.

The auric rays from the index finger of the right hand, emanating to the index finger of the left hand, coalesce with one another in fine granules as shown in Fig. 417. These rays follow the laws of polarities—*unlike poles attract each other* while *like poles repel each other*.

The auric rays from the thum of the right hand, emanating to the thum of the left hand, coalesce with one another in fine granules as shown in Fig. 418.

Now we come to an opposit condition where like poles repel each other. The rays from the index finger of the right hand, emanating to the thum of the left hand, do not coalesce but repel each other and in so doing form a resistance or *blocking disc*, as shown in Fig. 419. The appearance of these auric rays that ar antagnostic to one another can be likend to two jets of steam meeting each other when they ar on the same level and not influenst by any draft of air.

The fenomena of these auric rays ar illustrated in these three illustrations as the stepping stone to all the peculiar fenomena manifested in the magnetic atmosfere, aura, or psyco-magnetic radiations.

From some people the granulations in the auric rays appear as coarse granulations while with others they appear very fine, almost as homogeneous as smoke. I hav observd that the more refined the nature, the more fine the auric rays, and conversely, the coarser the make-up of the individual, the coarser the auric rays. This always holds true. I hav never seen anyone of a coarse nature, no matter

how "polisht" his appearance, that does not show coarse granulations. On the other hand, some individuals without much education, but of a refined *nature* wil exhibit in their auric rays very fine homogenic granules—in fact scarcely any granules at all.

As stated in the beginning of this lecture, I am not going into the various waves and shades, tints and hues, observd in the aura. It is not feasible nor practical in a work like this. What I am giving is a *practical foundation* for the study of aura which wil aid anyone in diagnosing disease as wel as caracter and temperament, and in fact in becoming more acquainted with *nature in a natural manner.*

Refinement and education show more plainly in the psyco-magnetic radiations than in any other way. In fact, one's whole history and almost his whole inheritance can be studied in his magnetic atmosfere. For the novis the *auric rays* ar far easier to study than the magnetic atmosfere as a whole. These rays ar always present from the sides of the hed, especially the ears, from the frontal eminences, nose, lips, chin, shoulder, elbows, fingers, hips, and ends of toes. From the region of the generativ organs of helthy animals can always be seen auric rays having their own peculiar caracteristics.

If any part of the body is diseasd, there wil be auric rays emanating from that part, and the caracter of those rays wil giv one traind in this work an unfailing clue as to the cause of the trouble. My Bio-Dynamo-Chromatic work is simply putting into fysical, demonstrable form what the auric rays, or the magnetic atmosfere shows.

How to Begin the Study of the Aura, Psyco-Magnetic Radiation, or Magnetic Atmosfere

In the first place, one must cultivate seeing auric rays from the fingers. This almost anyone can demonstrate to themselvs within a very few minutes if they follow out the proper tecnic.

Go into a dark closet or room and allow just enuf light to come into it to see the shape of your fingers—no more than this. Accustom your eyes to this light for about ten minutes. Sometimes it takes longer than that. Then hold your fingers opposit each other, drawing them away from

each other gradually, moving them sideways with the ends pointing toward each other, etc. When the fingers ar about an inch apart, you wil notis at first "streamers" reaching between the finger ends. The more mental stress you put on your fingers, or mental and tension stress combined, the greater wil be the volume of auric rays emanating from them.

Now draw them farther apart and move them sideways from each other. The rays wil follow in the direction of the fingers similar to the way molasses candy would do if stuck to the ends of the fingers and the fingers puld out or moved up and down opposit each other. The rays can be seen to curv and then take a strait line and perform all sorts of peculiar antics, depending upon the individual and the way he focuses his mind upon his fingers.

Once you hav perceivd these rays, you wil ever after know just what they ar. They ar normally what some call "moonlight blue" or what may be better cald "grayish-blue." You do not hav to imagin that you see them. Unless there is something wrong with your perception, you wil see them with proper training. One cultivated in the arts, for example a musician, wil perceive these auric rays very redily. The more traind a person is in acute observation, the more redily wil he see them.

After one has become accustomd to seeing these auric rays from the fingers, let him take a budding plant that is *alive and in soil*—not after it has been pickt and put into water. Place that against a dark background and in a subdued light. Accustom the eyes to the darkness and then carefully look at the budding plant. Around the buds wil be seen an aureola as before mentiond.

Some hav advocated the use of colord glass or lenses to "train the eyes" to perceive these auric radiations. This I think is a bad procedure as one wil then see a *false color*. I find that if a person wil accustom their eyes to the darkness for sometimes half an hour before studying these rays and then studies carefully and studiously, they wil lern them better, and wil see them in their true light more quickly, than if they use some means of changing their perception by staring thru colord glasses, or lenses.

For studying the auric rays from the human body, some kind of dark cabinet is very advantageous. Such a cabinet made by means of a three, four or five wingd screen, is illus-

trated in Fig. 420. The light shining into this cabinet should be *very* dim, and it is best to hav it shed thru white linen. A one-candle-power lamp wil illuminate a cabinet of this kind just about right, provided the light is past thru one or two thicknesses of white linen.

The subject should stand on felt a half inch or more in thickness. This is for an insulator. The shoes and stockings need not be removed when studying the magnetic atmos-

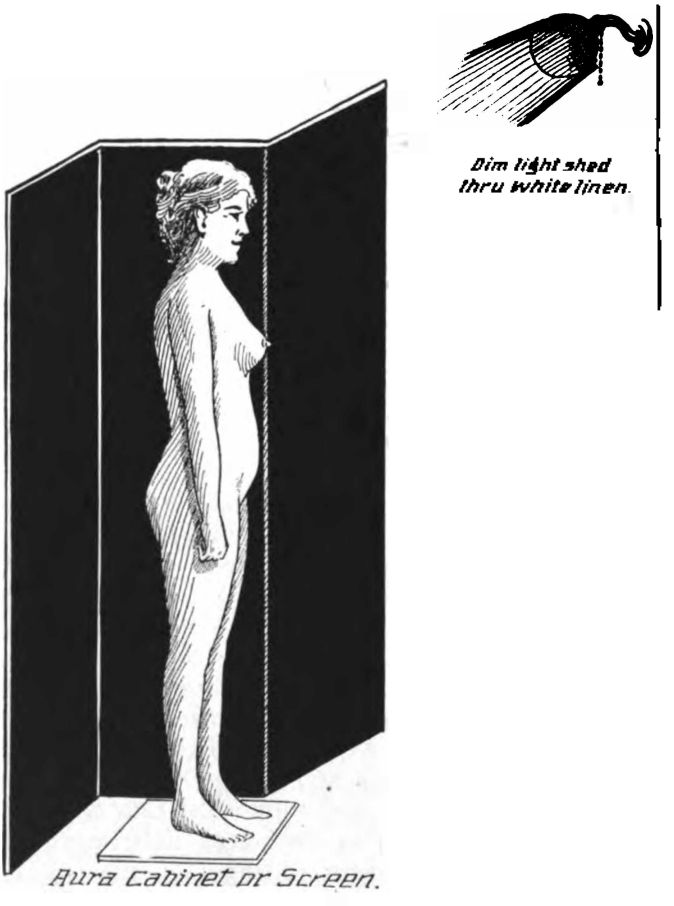


Fig. 420. Showing how to study aura from the human body. The light should come from a one or two candle-power electric light or its equivalent, and should pass thru one or more thicknesses of *white* linen or cotton. The subject should stand on felt about one-half inch or more thick.

fere of the human body, unless one wants to study the auric rays from the feet. If one is studying the auric rays from the waist line up, the subject could wear a *dark* colord skirt.

The best subject to study from is a helthy woman between the ages of 16 and 30. The auric radiations from the nipple and brest, as wel as from the pubic region of a young, helthy woman ar much more pronounst than from a man.

By having the subject insulated, one can draw the auric rays from the body in far greater quantity. It must be borne in mind that this auric or magnetic atmosfere is continually changing about the body as much as one's breth is changing. It is continually in motion. If one is grounded it flows off in uniform stress, but if the subject is insulated it wil flow off certain parts toward a capacity (a finger pointed at them) with far greater stress or we might say voltage.

When the student has become adept at seeing the auric rays taken from his own fingers or from the body of a subject, then he is in a position to begin studying the auric atmosfere *in toto,* that is, the *auric aureola* or *magnetic aureola.*

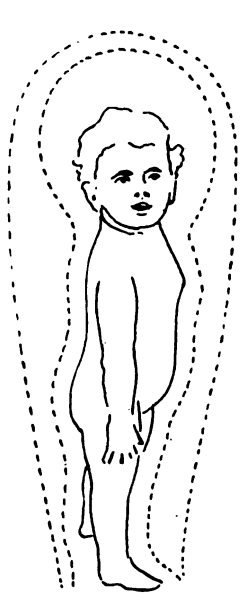
This auric or psyco-magnetic aureola in influenst by heredity and by one's whole being. It is what some hav cald "auric eg" because of its shape. The term, auric *aureola,* or magnetic *aureola* I like much better than auric *eg.* It is an *aureola* and whoever first cald it an *"eg"* must hav stretcht his imagination very much.

This auric aureola has very many peculiar properties and is composed of very many layers. The layers ar numberless, but it is very easy for one traind in the work, or one who is born with this faculty to see ten or more such layers, each layer having a definit meaning. These I cannot discuss in this work. All that I shal do in this short treatis is to try to get my readers interested in this wonderful study and to have them deduct therefrom the solution of many of the mysteries in fysical fenomena. In other words I want to help them study *nature in a natural manner.*

Auric Aureola
Influenst by Parentage

To giv my readers some idea of the deep significance of the auric aureola, I hav shown two types of children. The one in Fig. 421 is an outline of a child a year old, born of

parents past forty-five years of age. The one in Fig. 422 is an outline of a child two years old, born of parents not yet twenty-five years of age. Notis the difference in the upper part of the auric aureola, or what might be cald the *nimbus* of the child shown in Fig. 421. The wide space or wide nimbus I hav always notist in children born of parents past forty years of age or in children whose parents ar exceptionally wel educated. In fact the children of deep thinkers, especially if the parents ar past thirty years of age, hav a large nimbus or *caput aureola*.



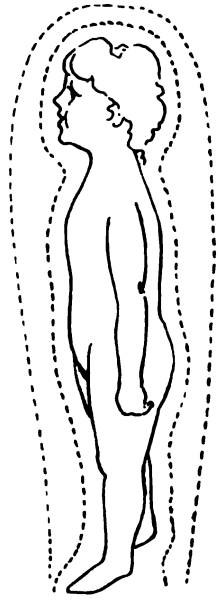


Fig. 421. Showing the *Auric Aureola* of a child a year old, born of parents past 45 years of age. The *Caput Aureola* or *nimbus* is the space between top of hed and the inside dotted line.

Fig. 422. Showing the *Auric Aureola* of a child two years old and born of parents not yet 25 years of age.

The outlines in these two figures I made from girl babies and they ar true to nature. All the drawings in this lecture I hav drawn from *nature* and every feature of auric rays or auric aureola is just as it appeard to me from the subjects depicted.

In further discussing these Figs. 421 and 422, I might say that as far as I could observ of the intelligence of these two children, they wer normal. Observ that the caput aureola of the baby shown in Fig. 421 is nearly three times as large as that shown in a child twice as old shown in Fig. 422. (The term "caput aureola" or nimbus indicates the space between the hed and the inside dotted line). That my readers might get an idea of the general caracter of the

Fig. 423. Showing the foto of the child outlined in Fig. 421.

baby shown in Fig. 421, I took a fotograf of her and it is shown in Fig. 423.

The auric aureola of a human is the luminous space that one wil see surrounding the whole body after he becomes accustomd to "reading" or observing aura. This auric aureola changes continually with every mood of the individual. It might be cald a *scintillating, kaleidoscopic nebula* about the body.

Beyond this auric aureola ar the streamers that you may hav red about, which the traind seer can observ emanating from a helthy body eight feet or more in all directions.

I am purposely omitting all the various tecnical names that some writers giv the different parts of the auric aureola and the streamers that extend beyond.

As a rule, all the average person can see is the auric aureola. Almost anyone can cultivate themselvs to see and

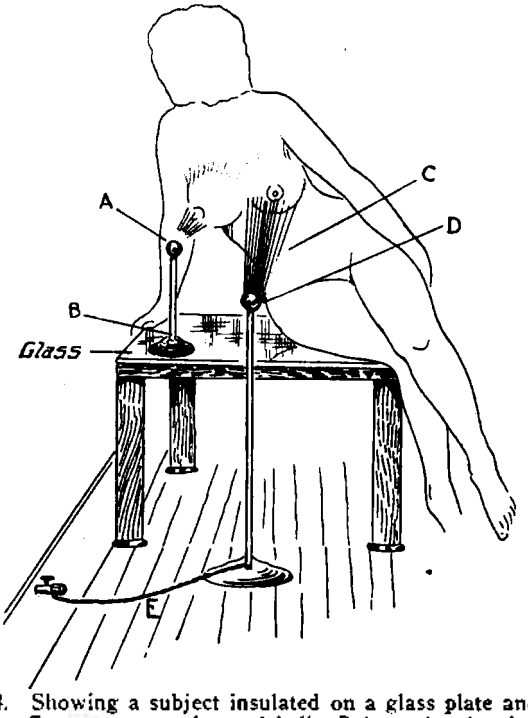


Fig. 424. Showing a subject insulated on a glass plate and the *Auric Rays* drawn off to a grounded metal ball. *B* is an insulated metal stand and *A* is a metal ball. *E* is a metal chain connecting a metal stand to a gas pipe. *D* is a metal ball. *C* shows the *Auric Rays* flowing to the grounded metal ball.

study this. Further than that I am very doubtful as to whether a person can see the extended radiations of varied texture and colors unless they make a specialty of studying the auric aureola.

From what I hav alredy said regarding the aura, psycomagnetic radiation or magnetic atmosfere, one can redily understand what an immense field it embraces and how nature in a natural way projects the individual's very soul in front of him. No doubt if we could all see this magnetic atmosfere, as I believe we originally wer able to see it, the race would be better. They would see others as they ar, because this auric aureola is really the person's double, and that is why it has been cald by some writers the "auric double."

Detaild Study of the Auric Rays

Step by step I shal now lead up to some most wonderful demonstrations of auric rays. The demonstrations as illustrated ar true to nature and represent the fundamentals of all study in aura reading. These illustrations demonstrate the accuracy of auric reading from the very fact that every fenomenon described is a *natural* fenomenon—*fysical* and not metafysical; *human*, not superhuman; *erthly*, not etheric.

Fig. 424 represents a helthy female insulated on a glass top table. To make the insulation more complete, I insulated the bottom of the table legs. On the table is a metal stand, *B*, with a metal ball, *A*, on its upper extremity. Standing on the floor and grounded to a gas pipe by a metal chain, *E*, is a metal standard with a metal ball, *D*, on its upper extremity. Notis the auric rays emanating from the right bust and nipple to the insulated metal ball, *A*. Notis that they ar short and do not come in contact with the metal ball. They apparently try to reach it but cannot. They appear to lack voltage or stress.

On the other hand, the auric rays from the left brest and nipple radiate from nearly the whole left bust in contradistinction to the small area of the right bust from which the rays emanate. Notis that these rays flow directly to the grounded metal ball, *D*.

This demonstration was made to show how the auric rays conform to fysical laws in every respect. My explanation of this fenomenon is that the flow of auric rays was so abundant to the grounded metal ball that there was not enuf stress left in them to flow to the insulated ball. The capacity of this metal ball is very limited and therefore if the rays did meet it at first, owing to the meager capacity they would stop flowing. This follows out the laws of static electricity.

Fig. 425 illustrates a helthy female standing on a felt pad which acts as an insulator. The left hand of a male, who is grounded to metal, is pointing toward the left brest of the subject. Notis the dense auric rays flowing from the nipple to the end of this finger. Notis the less tense auric rays flowing from the brest. Alto notis the auric rays flowing from the elbow toward this finger. The reason for this is that the hand is a capacity, and in this instance, it is not only a capacity but the left index finger was of an opposit polarity to the left brest and elbow of this subject, which

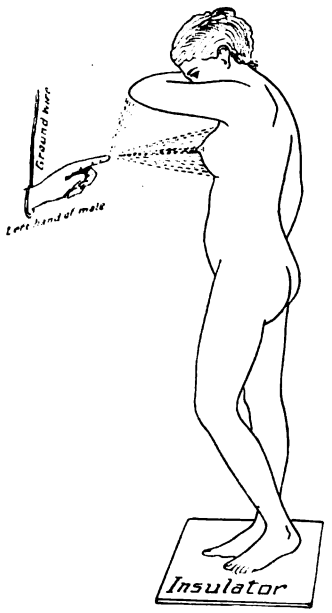


Fig. 425. Showing a helthy female standing on a felt pad. The index finger of a left hand is grounded and is drawing off the *Auric Rays* from the insulated subject.

also made the flow of auric rays all the more vivid. Whether the polarity of the hand had been different or not, it was a capacity and would of necessity draw the auric rays from the body. In this instance the demonstration was a very beautiful one, and this illustration does not do justis to the beautiful colorings in the auric rays flowing to the finger of the grounded person.

Fig. 426 is a remarkable one. This shows an extremely vivacious female about twenty years of age. She is grounded to metal by an aluminum hook attacht to her waist by a band. Altho she was grounded, she was so charged with magnetic energy or vital force that the auric rays not only emanated to the left hand of a male who was not grounded, but they emanated in a "shower" from her whole body. I hav illustrated only the most dense rays. Notis how they emanate from the left elbow, nose to fold of arm, left axilla, from the left brest to the index finger pointing toward it;

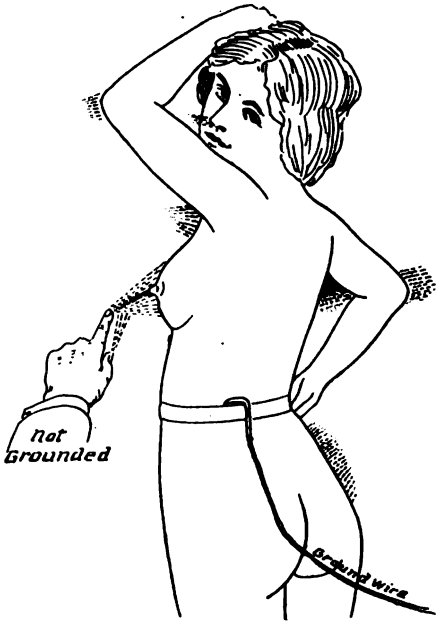


Fig. 426. Showing a grounded female and the *Auric Rays* drawn off to the left hand of a male. Notis the *Auric Rays* emanating from various parts of the subject.

how the rays from the nipple ar denser than those from the brest, and how they take a peculiar turn to reach the thum of the pointing hand. The "granules" of the rays reaching the thum ar entirely different than those reaching the index finger. The reason for this is the difference in polarity.

Take the other side of the body. Notis the rays emanating from the right axilla over to the right upper arm as wel as the fold opposit the elbow. Notis the rays emanating from the right elbow and over the right gluteal region.

The auric aureola of this subject mesurd fully six or seven feet in each direction from the body. The auric rays from any subject coming within 10 or 12 feet of this subject could be seen to deviate, so great was the auric force or vital force in this subject. When insulated, a novis could see the

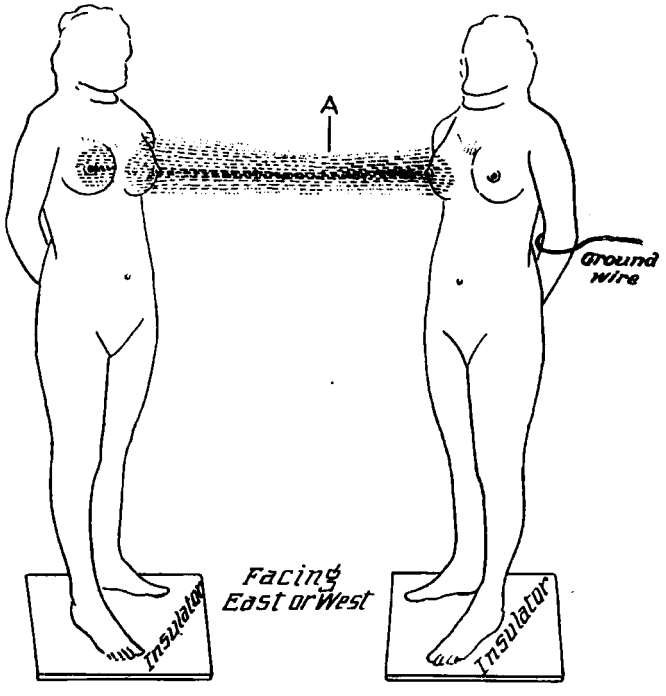


Fig. 427. Showing a pair of twins. Notis the homogeneous meeting of the *Auric Rays* at *A*.

scintillations from this subject's body and inquired about the bright "sparks" that he could easily observ in the auric rays.

Fig. 427 is probably one of the most remarkable that has ever been recorded. It shows twin sisters facing each other, each insulated to felt. One of them grounded to metal. They ar both facing at right angles to the magnetic merid-

ian. Notis how the auric rays ar leaving the right brest of the figure to the left who is not grounded, and the profusion of rays emanating from the left brest of the same figure. Notis that there ar no auric rays emanating from the left brest of the grounded figure. Notis that the auric rays from the right brest of the grounded figure ar more dense between the meeting point, *A*, than they ar in the subject to the left. Notis the homogeneous blending of these auric rays as they meet each other at *A*. The reason that the meeting point, *A*,

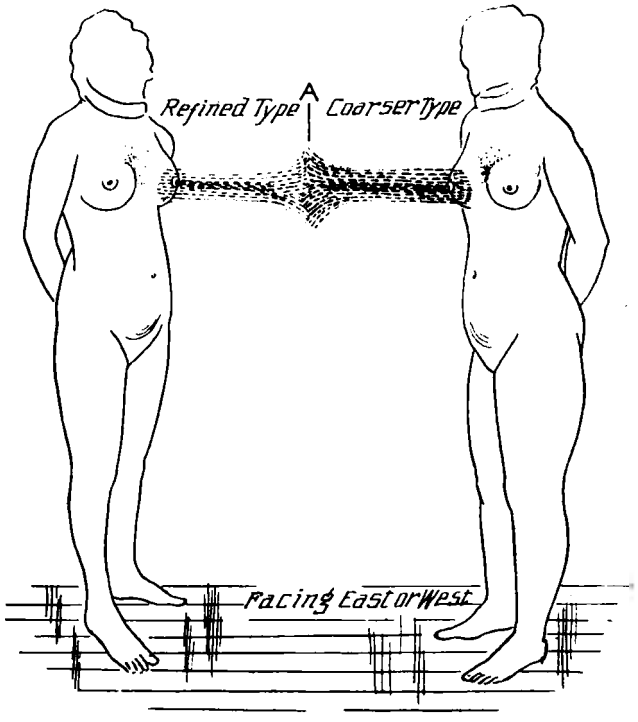


Fig. 428. Showing how the type of the individual influences the *Auric Rays*. Facing East of West.

is nearer the grounded subject than the insulated one is because the rays ar coming with greater force from the insulated subject to meet the greater capacity—the grounded subject on the right.

This Fig. 427 is to be studied and compared with Fig. 428. Fig. 428 shows two types of individuals, the one to

the left is a refined type, while the one to the right is of a coarser type. The one to the left is wel educated, while the one to the right is not. They ar both standing on a wooden floor, therefore both grounded to a certain extent. Both ar facing at right angles to the magnetic meridian. The meeting point of the auric rays is at *A*. Let us analyze this illustration. In the first place the auric rays from the subject at the left—the refined type—ar finely granular and emanate to a certain extent from the right brest but very profusely from the left brest, showing as usual a denser radiation from the nipple.

Compare that with the subject at the right—the coarser type. The granules from her right brest ar much coarser, and the rays from her left brest ar not very markt. Notis that the auric rays, where they meet, do not blend homogeneously but "combat" each other—that is, they ar not of the same kind. They ar antagonistic and show a "clumping." This clumping can be felt by the individual if they ar at all sensitiv.

Let me giv an example, and most of you can recall similar experiences. Suppose you ar sitting in a street car reading a book and your attention is engrost with what you ar reading. After a few minutes, altho you hav not notist what has been going on around you, you begin to feel uneasy. You feel there is something wrong but you do not know what it is. You look (to the correct side) and there you find someone sitting next to you whose very appearance is repulsiv to you. There is something about him or her that givs you a feeling of disgust or revulsion. You want to change your seat and you often do.

The question is: Why did you feel this way, not knowing anything about the caracter of the person sitting next to you? Here is the anser. Their auric rays meeting your auric rays wer antagonistic to you and you being of the finer type wer informd thru your subconscious nature, and that aroused your conscious nature to act. This I believe is all accomplisht thru the psyco-magnetic radiations from the individual. My study and observation along these lines make me feel *sure* that this is the reason for it.

Wer it not for extending this lecture way beyond its allotted space, I could give hundreds of illustrations to prove that the auric radiations that ar always present in the magnetic atmosfere or aura ar responsible for much that we call *intuition or instinct.*

I hav met and talkt with some of the greatest magicians and studied their methods. Those who ar doing their work "on the level" make more use of the auric rays than any other one fenomenon, altho some of them wer not aware of it. It was only recently that one very wel known and successful magician askt me something about my work along these lines. I had him blindfolded and askt him to tel me which hand I was pointing at him when I was eight feet away from him. Instantly he told me correctly, and whenever I changed the hand he would tel me. He said he knew he was able to do it but did not know why.

To further demonstrate to this magician that the auric rays ment something, I stood about *four feet* from him and past first my right hand and then my left hand down in front of his body. I told him that when my left hand was opposit his epigastric region I got a different energy—one that would indicate ulcer of the stomac. He immediately said that he had had pains in his stomac for several years and that they wer now getting worse. Within two months I herd that this magician had been operated on for ulcer of the stomac and that an ulcerous condition of the stomac had been found.

I could go on reciting similar experiences almost indefinitly, all proving the reality and the magnitude of the auric or psyco-magnetic atmosfere enveloping all mankind.

As speech is merely "sounds imbued with personal meaning," so the vital force of an individual is imbued with their inmost consciousness. The interpretations of vital force of different persons is as diversified as the pebbles on the seashore. One sees beauty in the very object in which another sees ugliness. Therefore the interpretation of energy of fysical fenomena must needs be subjectiv. There ar fundamental laws governing natural fenomena which every successful student must know and understand.

Figs. 429 and 430 show traind vivacious models in classical poses. Some of the leading auric rays I hav depicted. It was not feasible to show the entire magnetic atmosfere of these subjects, but no one not skild in this work has any idea of the kaleidoscopic appearance of the magnetic atmosfere of these subjects during these poses. One could almost read their thots from their auric, magnetic radiations.

To bring out certain fysical and fundamental laws, I hav skecht a few of the auric rays and wil explain them. Both of these subjects ar insulated and facing east or west.

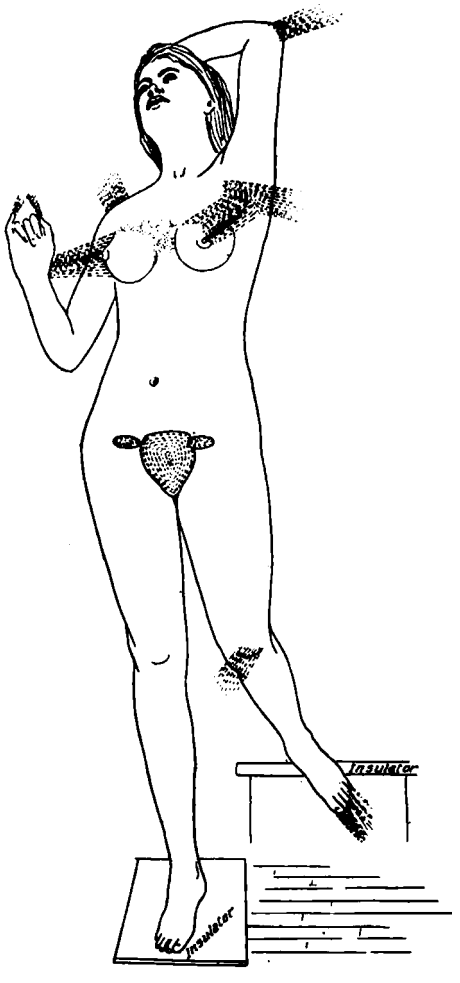


Fig. 429. An animated subject in classical pose. Notis the Auric Rays and how they "point."

In Fig. 429 notis the auric rays emanating from the left elbow and from the right shoulder. This model was instructed to make her muscles tense during this pose in order that the rays might be more vivid. Notis from the left axilla how the rays ar emanating at right angles to the axilla and how the rays from the left brest and nipple *indent* the rays from the axilla. This indenting or denting of auric rays is similar to blowing into a cloud of smoke. Notis how dense the auric rays from the left nipple ar. Now observ the auric rays from the right brest and nipple direct themselvs toward the flext right arm. Between the two brests notis the halo.

A very remarkable spectacle in this demonstration was the rays emanating from the little finger and thum of the right hand. As has been explaind, the polarity of the thum is opposit to that of the fingers. Notis how these rays emanate toward each other—unlike poles attract each other.

Now we wil go down to the left nee. Notis how the rays emanate from that. Next the feet. From the outstrecht toes of the left foot the rays emanate toward the floor and it wil be notist that the rays from the great toe converge toward the rays of its neighboring toe. The reason for this is the polarity. Then notis the auric emanations from the pubes and from the ovaries. If there had been an object such as the finger or some grounded metallic rod held in front of the pubes, there would be streamers going from the pubic region to the object, but in this case there was nothing for them to radiate to and therefore they show as a granular mass in the manner outlined.

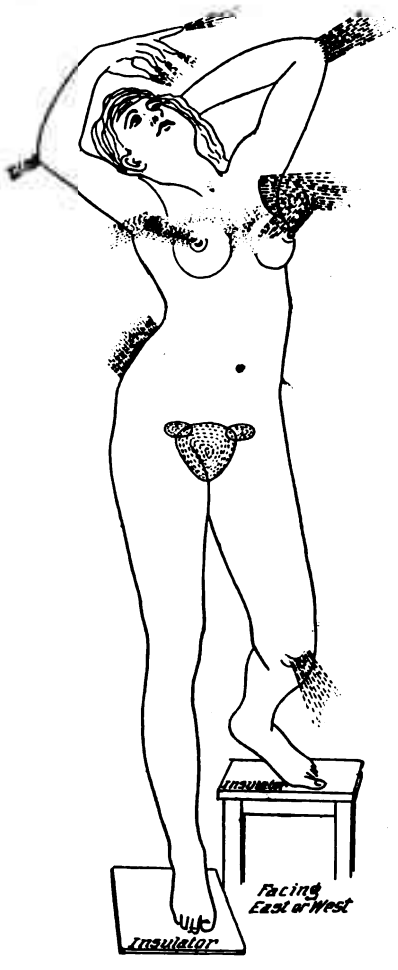


Fig. 430. Another subject similar to the one shown in Fig. 429. The Auric Rays here present a world of study.

Fig. 430. This model made her muscles tense. Her attention is attracted to her right hand and she is making stress on the fingers. Notis the rays from their tips. Also notis how the rays from the thum coalesce toward the rays from the fingers. Notis the rays emanating from the right elbow and the right axilla, and the rays from the right nipple to the right axilla. Observ the auric rays going from the left elbow and the great abundance of rays emanating from the left axilla. From the left brest and nipple can be seen the auric rays denting the auric rays from the axilla. This is a beautiful example of the *denting of auric rays*.

Between the two brests notis the halo. This is only a faint depiction of the halo which surrounds the entire brest, but I hav purposely omitted showing any more of it for fear of confusing the reader.

From the right hip notis the auric emanations, and those from the left nee.

The subject made special stress of mind on the parts from which these auric rays emanated.

The auric manifestation about the pubes of this figure ar similar to those in Fig. 429, but it wil be notist the relation to the ovarian emanation is different in the two figures. There is an anatomical reason for this.

Fig. 431 represents a subject not insulated and facing east or west. These auric rays ar shown on a black background to more vividly depict just the way they appear to the observer. Notis how the auric rays from the right thum and forefinger emanate toward each other. Also notis how the rays from the right bust and nipple emanate toward the right arm and axilla.

As the auric rays wer so pronounst over the epigastric region of this model, I inquired as to her fysical condition.

Fig. 431. Showing the Auric Rays against a black back ground. This subject is not insulated. She is facing East or West.

She said that she was suffering at that time with indigestion, having eaten something that disagreed. I hav depicted the auric rays from this epigastric region to giv the reader some idea of how they appeard.

Between the left thoracic region and the left arm can be seen the typical auric rays. From the left thigh can also be seen the auric rays.

Fig. 432 is a most remarkable one as it shows what effect mind has over the auric rays. It is a good example of the effect of mind over matter. This model is insulated on a hevy pad of felt. I instructed her to center her mind upon her axillæ and to tense the arms in the akimbo position. Notis the emanations from both shoulders. These wer very markt because of the muscular stress. Notis the remarkable filling in of the auric rays in the triangle made by the arms, forearms and sides of the body. Notis the emanating rays

Fig. 432. The Auric Rays against a black background. A wonderful demonstration of mind over matter. Her mind was centerd on her axillæ.

from each elbow as wel as from the right nee and from the toes of the extended foot.

Contrast these rays and the emanations about the busts. Had this subject been instructed to center her mind upon her busts, a very dense halo would hav surrounded them.

Fig. 433 is the only one of its class that I am showing in this work. So far all the subjects depicted hav been facing

east or west. This subject has no general toxemia and thus has a normal MM VR. She is facing directly north or south and standing on a bare floor. Notis the *curving* of the auric rays. This is the fenomenon that I hav notist for years at various times, but for years knew not how to explain it. With some individuals it is scarcely seen while with others it is very markt. Normally the auric rays ar at right angles to the source, but when a helthy individual is facing north or south, they usually curv as shown in this illustration.

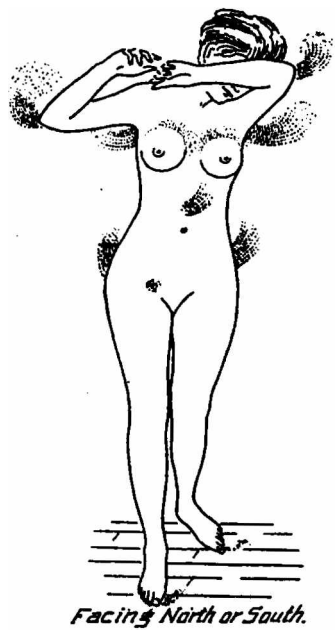


Fig. 433. Showing the effect of the magnetic meridian on the Auric Rays.

I hav shown here the auric emanations from the epigastric region. These emanations ar often present soon after ingesting food, but they do not appear the same as those coming from persons suffering with gastritis or ulcer of the stomac or any other disease of the stomac.

I notist the emanations from the right ovary wer more markt than those from the left, and I hav purposely shown the auric manifestation about the right ovarian region. Up-

on examining this subject, I found she had a very sensitiv right ovary.

I think I hav coverd all of the underlying principles and fysics governing the manifestation of auric rays in general. Now I shal show two subjects in water to further illustrate the fysical side of the psyco-magnetic radiations.

Fig. 434 shows a subject standing in *fresh* water. Notis that the auric rays ar visible but not very markt. They can be seen coming from the right elbow, the nipples and bust.

Fig. 435 shows a subject in *salt* water. Observ that no auric rays ar to be seen. This shows most conclusivly the fysical nature of the magnetic atmosfere.

Fig. 434. Showing the Auric Rays from a subject in *fresh* water.

The Magnetic Atmosfere in Disease

I am often askt by students how they can lern the auric colors (odic colors) showing various diseases. It is very easy to explain this if one wil follow out the directions carefully.

As described in Part One, my Chromatic Screens ar for diagnosing certain diseases. It is also there explaind that these diagnosing screens radiate the color which interferes with the diseasd radiations from the body and so *interferes* with them, thereby allowing the energy from the magnetic meridian to temporarily act upon the individual.

From these proven facts, it can be deduced that the color of the emanations from a person suffering with tuberculosis, for example, wil hav the complementary color of the screen which diagnoses tuberculosis. The same deductions can be made regarding each of the other Chromatic Screens.

Since the Bio-Dynamo-Chromatic Screens hav been developt following out actual clinical experiences to say nothing about fysical laws, and inasmuch as they hav been proved true, I can definitly say that the auric color of each disease is the color complementary to the Chromatic Screen which diagnoses that disease.

Fig. 435. Showing the absence of Auric Rays from a subject in *salt* water.

For the student to know exactly what the complementary is of each of these screens, he must stare for about one minute at the center of the screen when the light is radiating thru it. *The eyes must be focust and not moved.* This experiment must be done in a dark room. When the light is extinguisht, close the eyes, letting them focus at the same point that they wer before the light was extinguisht. Wait a few seconds and observ the color. If your eyes ar normal, it wil be the prevailing color of the magnetic atmosfere of the person suffering with the disease which is diagnosed by the given Chromatic Screen.

The Localizing of Lesions

In Part One the fysics covering the intensifying of energy and the localization of lesions by means of my *Energy Intensifier* ar fully explaind and illustrated.

In that Part One I purposely omitted using the word "aura" because I did not want to bewilder the reader. Now that I am discussing the aura or magnetic atmosfere I can say that any lesion in the animal body givs off energy of its own peculiar kind. This energy is shown in auric rays emanating from the magnetic atmosfere of the individual. To a novis these rays show in the shadow of my Energy Intensifier as a light or scintillating spot. Often an individual who has never herd of auric rays or magnetic atmosfere wil point out on the body just where the lesion is by seeing this light and scintillating spot in the shadow caused by the diagnosing screen radiating light against my Energy Intensifier. This is truly one of the most striking fenomena in the whole study of psyco-magnetic radiation.

Some hav attempted to tel me that inasmuch as the auric rays ar influenst by the wil that the patient consciously or subconsciously, directs the rays to the diseasd spot. If the rays point out the lesion, that is all that is necessary. Personally, I think that it is not the wil of the patient, unless it be the subconscious wil because as a rule the patient has no idea where the lesion is. Especially is this true when they hav no idea what disease is afflicting them.

A good illustration of this psyco-fysical fenomenon is to take a piece of sheet metal about 18 inches square and place an alcohol lamp under one part of it and leave it there until the metal is very hot. Glance across the metal and you wil see a shimmering directly over the part heated by the lamp. Why is this? It is simply because the air is influenst by the energy given off from the lamp.

Now, suppose a person has a tuberculous lesion in the lung. There is certainly more activity going on in the diseasd part than there is in the normal part. It is a fight between the invaders and the host, and the caracter of the energy depicts the caracter of the invasion.

Thot and Disease Change
the Odic Colors

To further impress upon your minds the wonders of vital force and to make you realize how little any of us

really know of this force, I shal just touch upon the effect of thot on the color of the auric atmosfere.

Recently I gave a complimentary lecture and demonstration of the Magnetic Atmosfere at Chicago to my pupils. The room was crowded and a physician brot in a young lady patient for me to use as a model. I had never seen her and the room was dark when she came in. I did not even know which physician sent her.

I placed her before the dark screen and askt if any present had ever seen a demonstration of aura. All said they had not. I then askt them to tel me the prevailing color impression they had of the auric aureola enveloping the entire body of this subject. Nearly all said it was a "greenish blue" or a "peculiar blue" from the hips up, but that the color about the pubes was of a "yellowish green." *I gave no suggestion.*

I had told the model to center her mind on red clothes and red objects at a given signal. I then askt the audience to keep watch of the aureolar color and tel me if it changed and if so to name the color. Soon voices cald out, "terra-cotta," "brick red," "red."

Nearly every one present said they could definitly see the auric rays in the aureola enveloping the body.

After this I examind the lady by my B-D-C method and she gave a pronounst *D*-MM VR—gonorrea.

When the subject left the room I askt for the physician who had produced the model and inquired about the case. He told the audience that he was treating her for gonorrea, which had infected the ovaries and tubes. The gonorreal infection gave the "greenish yellow" auric envelop about the pelvic organs and her entire auric aureola was alterd by the intoxication.

Conclusion

In this Part Ten, dealing with what some call "mysterious fenomena," I hav tried to show and prove by drawings from actual subjects that the auric rays and the magnetic atmosfere ar only fysical representations of a rate and mode of motion.

I hav tried to link the fysical with the so-cald metafysical.

I hav tried to show that nature may be interpreted in a natural manner.

I hav tried to show that what is natural is scientific and that if it is not natural it is not scientific.

I hav tried to show what a wonderful mecanism life is—how it is simply in one way a rate and mode of motion, but in another way it is governd by a subconsciousness that is past human understanding.

The more one studies nature and natural fenomena, especially as they relate to vital force, the more he must be imprest with the fact that altho mankind is said to be "the greatest of natural products," yet in our present state we ar as dependent for helth upon natural laws as the fish is dependent upon water for its existence.

Nature's laws ar immutable laws and the nearer we keep to nature, the nearer ar we to nature's goal—HELTH.

In this work I hav also tried to imbue my reader with the fact that all nature is a great cosmos and that each individual, each animal, and each plant is influenst by one another.

As the floating seeds ar influenst by the moving air, so is all life influenst by all other life.

I hav tried to show that the study of nature is the greatest of all studies, and that "the study of man is man."

In concluding this work, which represents the best I hav to offer, I want to invite you, my readers, to become acquainted with NATURE and see what she has in store for you.

That this whole work wil help you personally—help to make you a better and more useful HELPER OF HUMANITY —is my stedfast desire.

SLEEP

The dictionaries tel us that sleep is the state of repose or quiesence, occurring particularly in man and animals, caracterized by complete or partial unconsciousness, relaxt condition of body, and general diminution of vital functions.

As deth in one sense of the term means an "endless sleep," then sleep is a temporary form of deth, because if one did not waken he would be cald "ded."

As life signifies a state of being caracterized by a rate and mode of motion known as *vital force*, then sleep from its definition means a cessation, or relaxation, or a slowing up of this rate and mode of motion.

It is true that we breathe and our harts beat and the functions of the body go on when we ar asleep. Therefore sleep means an abolition of *activ* life while the passiv life continues.

Sleep in scientific terms then means a storing up of energy—stored by the automatic passiv mecanism that caracterizes all life, animate or inanimate. It is a storing up of energy so that the activ part of the being may hav power to act. Sleep is to life *kinetic energy*—it givs to life energy to do work.

During sleep the psyco-magnetic radiations from the body ar greatly reduced—proving again that the psyco-magnetic radiations or magnetic atmosfere of the body is simply a manifestation of energy, voluntary or involuntary. As these magnetic radiations from the body ar increast, by mental effort, so ar they decreast by sleep which is absence of mental effort.

All life requires sleep. In humans some sleep every twenty-four hours is cald for, while in sub-humans sleep may be several times a day or once in several days, or at od intervals. The sleep in many subhumans is not what humans would call sleep, as they ar alert when sleeping almost as much as when they ar awake, but many such animals hav periods of long sleep or, if not sleep, long resting. This is

especially notist in the prolonged sleep of animals during hibernation or estivation.

The more deeply any animal is sleeping, the less energy can be observd in their magnetic atmosfere or radiations.

The same holds true of the sleep in inanimate life such as plants. Only the slightest magnetic atmosfere can be seen about vegetation during its "resting period" but, as before mentioned, beautiful auric rays can be seen about the budding plant.

From the definition and discussion abov given, it can be seen that sleep, no matter whether in animal or vegetable life, is the slowing up of the normal rate and mode of motion known as life.

Conditions Effecting Sleep

If you ar so unfortunate as to be obliged to sleep in a noisy city and then once in a while hav the opportunity to sleep in the quiet country, you wil know of one condition that affects sleep, that is, external vibration—noise.

One wil often say they hav become accustomd to this noise or that noise and so can sleep without any difficulty in that commotion, but they do not realize that sleep in a commotion is not the same as sleep in quiet. No one can rest in the same way, whether accustomd to it or not, where there is violent vibration (noise) about them. This is one great argument for sleeping in a quiet place, as no one ever obtains the same rest in a turbulent vibration that they do in the absence of irritating vibrations.

No one can sleep as wel with the bright sunlight shining on their face as they can in the dark. If they do sleep as wel, it is because of extreme fatigue, and the rest is not the same as sleeping in the dark.

The same is true of irritation upon the auditory nerv as upon the optic nerv.

Another condition that influences sleep is the *magnetic forces* of the erth, whether we see them, hear them or feel them. Judging from all other energies, they must affect sleep. That is why some individuals can sleep wel if they ar grounded to metal as previously described, that is, by having a metal wire run crosswise of the bed under the lower sheet, this wire being attacht to some grounded metal such as a gas pipe, water pipe or steam pipe. Some hyper-sensitiv individuals can be cured of sleeplessness by this simple pro-

cedure. This is not imagination, it is not suggestion, because it has often been tried out when the individual did not know that the ground wire had been placed under the lower sheet. The metal may come in contact with the skin, but as a rule it should be put under the sheet and the moisture from the body wil make a ground sufficiently good to keep the individual in a static equilibrium.

The magnetic energies of the erth hav an influence upon sleep in other ways as, e.g., in the *direction* in which the person sleeps. Some persons wil sleep wel with the top of the hed toward the east or west. This is not suggestion and neither is it imagination because we hav seen this workt out very often without the persons knowing anything about the points of the compass of the room in which they wer sleeping. To further prove that this peculiar fenomenon is not influenst by imagination or suggestion, we hav often changed the direction in which infants slept and hav cured them of malnutrition without any other change being made in their habits.

I hav previously described experiments with animals, showing that many animals did better with the hed in a certain direction. I hav seen this tried out so many times that I do not hesitate to say that it is a fact. If an animal rests better or sleeps better, their condition is made better. This may be the reason why hens wil lay more egs if their heds ar directly north or south when roosting.

There is another condition which influences sleep and that is *animal vibration.*

Sleeping Influenst by Auric Rays or the Magnetic Atmosfere

As previously described, every rate and mode of motion within the body influences a rate and mode of motion emanating from the surface of the body, these emanations being known as the aura, the psyco-magnetic atmosfere, or magnetic radiations. The most prominent of these radiations I hav termd auric rays, as they ar distinct rays in the auric or magnetic atmosfere.

I hav also mentiond the fact that these auric rays can be projected, and that one individual is influenst by another individual by what some hav cald the *sixth sense*, but which

in reality is the auric rays—the magnetic atmosfere projected .

I hav also mentiond the fact that like poles repel while unlike poles attract each other, and hav given illustrations to show that love or affection is simply the blending or coalescing of the auric rays. I hav illustrated the experiments that I hav made to show that dislike or antipathy or hate is exprest by antagonism in the auric rays or magnetic atmosfere.

The more antagonistic one person is to another, whether they try to hide it or not, just so much more repellent force hav the auric rays upon one another.

How often does the physician hear that this patient does not sleep wel, that something irritates them but they do not know what. The physician asks if they sleep with anyone, and perhaps they do. If the physician is informd regarding auric fenomena, he wil at once advize the patient to sleep alone. Sometimes if the patient sleeps alone but in the same room with some one, they have to go to a different room.

Often a physician hears a patient say that they cannot sleep at all if a certain nurse is in the room, but if another nurse is there they can sleep wel. You wil say this is all imagination, but in many cases the antagonistic nurse was sent into the room after the patient was asleep and the patient would unconsciously begin to move about as if their subconscious condition wer irritated by the very presence of the emanations from the one that was antagonistic to them. I hav often questiond such patients to see why they had this feeling, and almost invariably they say they do not know. They ar sorry it is so but it is true.

Should People Sleep Together?

This is a matter of temperament. It is a matter of the auric emanations. As a rule, I should say it is better for people to not sleep together because if one has a weakness in any part of the body, that weakness seeks to be satisfied. If the sleeper's companion can satisfy that weakness, it is going to be taken, because the law of nature is harmony—equilibrium.

On the other hand, some individuals can be made wel by sleeping with a strong person if the temperaments ar agreeable, that is, if the auric emanations coalesce. I know

of a case of a husband and wife where the wife was an invalid and the husband a robust man. Little by little, a change came over them, the wife becoming stronger and the husband less robust. They slept in the same room but in different beds. I advized them to sleep in separate rooms, and it was not long before the husband regaind his former robust helth. This was a case of one individual being a parasite, altho unconsciously, as they wer a wel mated couple. Perhaps that was why the effect was so markt.

I know without any doubt that the auric emanations from one person affects another during sleep as wel as during waking hours. If, however, a couple ar obliged to sleep together because of the arrangement of rooms or beds, many times the irritating effects of the auric rays of the one over the other is obviated by having the individuals grounded.

One condition I hav often observd in studying the traits of those who hav for years slept together, and that is that one of the individuals completely dominates the other, and I hav often herd it said of such individuals that the temperament of the one seemd to hav fallen entirely under the control of the other. If two individuals ar of a similar temperament and both of the same activity, sleeping together is a great detriment and is bound to make one or the other deteriorate in some way. This is a natural law—a law of opposits attracting each other and likes repelling. This same law holds good thruout all nature, and nature's laws ar immutable laws.

If a physician is so scoold that he can study the auric emanations of individuals, he can almost at once tel whether they should sleep together or not. However, this faculty is so rare that it cannot be universally practist. So, taking all things into consideration, probably the physician should advize his patients to sleep alone. This can be done by having separate beds in the same room or in separate rooms, depending entirely upon the persons.

As for sisters sleeping together, or brothers sleeping together, I believe it is a bad plan as one is liable to draw from the other—one wil be the gainer and the other wil be the loser.

It can thus be seen how sleep, being a condition of vital force (and vital force is a rate and mode of motion), is influenst by all energies and probably in a more sutl way than when the individual is awake.

Dreams may be influenst by some projected auric rays as wel as by disturbance in the circulation.

Sleep to be the most restful should be where the surroundings ar quiet and where disturbing influences, either animate or inanimate, ar absent.

DETH

As before stated, deth is a prolongd sleep, and as sleep is a change in a rate and mode of motion, then deth appears to be the cessation of one form of motion and the beginning of another. In other words deth seems to be a metamorfosis of motion, vital force being liberated and changed into another and higher form of motion.

Judging by all other energies, deth must be a transition to a superior life, and man merely a link in this wonderful chain of upward progression.

Is it not an inspiring thot then that all energy (light, color, sound, or other energy—all harmonies of the outward universe) forever exemplifies and teaches this great principle of cosmic influence?

Do You Want to be Kept Informd?

Altho I would like
to meet every reader
of this book face to face,
yet I can hardly expect
such a plesure.

I can, however, hear
from every reader
of this book.

Here is my plan:

Write me after you hav
red this book, telling
me your special line of
work, and that you
would like to be kept
informd as to my
reserch work as wel
as to know what others
ar doing along natural
lines in aiding humanity.

Give me your ful name
and address and I wil
put you on my
mailing list.

GEORGE STARR WHITE, M. D., F. S. Sc. Lond.
327 South Alvarado Street
Los Angeles, California, U. S. A.

I hope to see you face to face

Yours for progress

Jas. Starr White, M.D.

GENERAL INDEX