

The New Psychology

PHYSIOLOGY
THE PSYCHOLOGY OF MEDICINE
MENTAL CHEMISTRY

By
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VOLUME IV

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Thought engenders thought. Place one idea upon paper, another will follow it, and still another, until you have written a page. You can not fathom your mind. It is a well of thought which has no bottom. The more you draw from it, the more clear and fruitful it will be. If you neglect to think yourself, and use other people's thoughts, giving them utterance only, you will never know what you are capable of.—G. A. SALA.

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Physiology

Part Eleven

PHYSIOLOGY

ONE of the most interesting features of the human system is its series of manufacturing plants in which are produced the chemical agents necessary to mobilize the constituents of food. And it is a part of the fine natural economy that the secretions containing these chemical agents should serve several other purposes also. In general, each may be said to have an alterative effect upon the others, or at least upon the activities of the other plants; also they act upon the inward-bound nerve paths as exciters of effects in both the conscious and the subconscious activities.

Radiant energy, whether consciously or subconsciously released from the body,

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becomes the medium of sensory impressions that flash back to the perceptive centers and there set up reactions which are interpreted by these centers according to their stage of development of self, and therefore they interpret these messages exactly as they are received, without attempt to "think" about them, or to analyze them. The process is as mechanical as an impression made by the actinic rays of the sun on a photographic plate.

The general principle by which an idea is preserved is vibratory like all other phenomena of nature. Every thought causes vibrations that will continue to expand and contract in wave circles, like the waves started by a stone dropped in a pool of water. Waves from other thoughts may counteract it,

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or it may finally succumb of its own inanition.

Thought will instantly set in motion the finest of spiritual magnetism, and this motion will be communicated to the heavier and coarser densities, and will eventually affect the physical matter of the body.

Life is not created—it simply IS. All nature is animate with this force we call “life.” The phenomena of life on this physical plane, with which we are chiefly concerned, are produced by the involution of “energy” into “matter,” and matter is, itself, an involution of energy.

But when the stage of matter is reached in the process of Nature’s involution, matter then begins to evolve forms under the action upon it and within it. So that growth and life are

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the results of a simultaneous integration of matter and energy. Evolution starts with the lowest form of matter, and works upward through refining processes to serve as a matrix of energy.

The internal secretions constitute and determine much of the inherited powers of the individual and their development. They control physical and mental growth, and all the metabolic processes of fundamental importance. They dominate all the vital functions of man. They co-operate in an intimate relationship which may be compared to an interlocking directorate. A derangement of their functions, causing an insufficiency of them, an excess or an abnormality upsets the entire equilibrium of the body, with transformed effect upon the mind and the organs. Blood chemistry of our

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time is a marvel undreamed of a generation ago.

These achievements are a perfect example of accomplished fact contradicting all former prediction and criticism. One of the greatest advances of modern medicine has been the study of the processes and secretions of the hitherto obscure ductless glands; endocrinology, as this study is called, has thrown much valuable light upon certain abnormal physical conditions about which science had until now been in the dark. We now know that most of the freaks of nature we see on exhibition are such owing to endocrine disturbance—the disturbance of the ductless glands. The bearded lady, a victim of pogoniasis; the victims of obesity and of skeletonization; of acromegalis, or giantism; of micromegalia or liliputianism—all such evolu-

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tional deviations are due to subnormalities or abnormalities of the chemical elements which the glands produce and send into the blood-stream.

These are no mere theories, for they have been rigorously tested in the laboratories of science. As Sir William Osler, one of the world's most illustrious luminaries of knowledge, has said: "For man's body, too, is a humming hive of working cells, each with its specific function, all under central control of the brain and heart, and all dependent on materials called hormones (secreted by small, even insignificant looking structures) which lubricate the wheels of life. For example, remove the thyroid gland just below the Adam's apple, and you deprive man of the lubricants which enable his thought-engines to work. It is as if you cut off the oil-supply of a

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motor, and gradually the stored acquisitions of his mind cease to be available, and within a year he sinks into dementia. The normal processes of the skin cease, the hair falls, the features bloat, and the paragon of animals is transformed into a shapeless caricature of humanity."

These essential lubricators, of which a number are now known, are called hormones—you will recognize from its derivation how appropriate is the term. The name is derived from the Greek verb meaning "to rouse or set in motion." The name was given by Starling and Bayliss, two great Englishmen noted for their research work in endocrinology. Cretins—dwarfed imbeciles—can be cured by the administration, internally, of the thyroid glands of sheep, with truly miraculous results; because cretinism is

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caused by the lack or absence of thyroid gland secretions.

As an instance of the fascination of these studies, consider the conception that the thyroid played a fundamental part in the change of sea creatures into land animals. Feeding the Mexican axolotl, a purely aquatic newt, breathing through gills, on thyroid, quickly changes it into the ambystoma, a terrestrial salamander, breathing by means of lungs.

The endocrine glands produce secretions which enter the blood-stream and vitally affect the bodily structure and functions. The pituitary is a small gland, located near the center of the head, directly under the third ventricle of the brain, where it rests in a depression in the bony floor-plate of the skull. Its secretions have an important part in

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the mobilizing of carbohydrates, maintaining blood-pressure, stimulating other glands, and maintaining the tonicity of the sympathetic nerve system. Its under, or over, activity during childhood, will produce marked characteristics in the body structure, and what concerns us more, equally marked characteristics of mental development and function.

The thyroid gland is located at the frontal base of the neck, extending upward in a sort of semicircle on both sides, with the parathyroids near the tips. The thyroid secretion is important in mobilizing both proteids and carbohydrates; it stimulates other glands, helps resist infections, affects the hair growth, and influences the organs of digestion and elimination. It is a strongly determining factor in the all-around physical development, and also in the mental

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functioning. A well-balanced thyroid goes a long way toward insuring an active, efficient, smoothly co-ordinated mind and body.

The adrenal glands are located just above the small of the back. These organs have been called by some writers the "decorative glands," since one of their functions appears to be that of keeping the pigments of the body in proper solution and distribution. But of greater importance is the agency of the adrenal secretion in other directions. It contains a most valuable blood-pressure agent; it is a tonic to the sympathetic nerve system, hence to the involuntary muscles, heart, arteries, intestines, and so on; as well as to the perceptive paths. It responds to certain emotional excitements by an immediate increase in volume of secretion, thus increasing

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the energy of the whole system, and preparing it for effective response.

The cerebro-spinal nervous system is the telephone system of the conscious mind; it is a very complete wiring system for communication from the brain to every part of the body, especially the terminals. It is the intelligence department of self-conscious man.

The sympathetic nervous system is the system of the subconscious mind. Behind the stomach, and in front of the spine, is the center of the system known as the "Solar Plexus." It is composed of two masses of brain substance, each in the shape of a crescent. They surround an artery whose function it is to equalize the blood pressure of all the abdominal organs.

Just as the brain and the voluntary nervous system constitute the apparatus

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of self-conscious man, in like manner the solar plexus and the sympathetic system comprise the special apparatus of the subconscious mind.

The function of the sympathetic nervous system is to maintain the equilibrium of the body, to act as a balance wheel, to prevent over or under action of the cerebro-spinal system. As it is directly affected by emotional states such as fear, anger, jealousy or hatred, these may easily throw out of gear the operation of the automatic functions of the body. That is to say, that emotional states such as joy, fear, anger and hatred may upset such functions of the body as digestion, blood circulation, general nutrition, and so forth.

"Nerves," and all the unpleasant experiences that follow in the way of bodily discomfort and ill health, are caused

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by negative emotions, such as fear, anger, hatred and the like; they break down the resistance which has been offered by the various plexii which, when in normal working order, have a definite capacity to inhibit the effect of such emotions.

The sympathetic system is the apparatus whose function it is to maintain the body in a normal and healthy working order and to replace the wastage due to ordinary wear and tear, both emotional and physical. The kind of emotions which we entertain is therefore of great importance; if positive, they are constructive; if negative, they are destructive.

Happiness, prosperity and contentment are the result of clear thinking and right action, for the thought precedes and predetermines the nature of the ac-

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tion. A little artificial stimulation in the form of intoxicating liquor may temporarily still the senses and thus serve to confuse the issue, but as in economics and mechanics every action is followed by a reaction, so in human relations every action is followed by an equal reaction, and so we have come to know that the value of things depends upon the recognition of the value of persons. Whenever a creed becomes current that things are of more importance than people, programs become fixed which set the interest of wealth above the interests of people, this action must necessarily be followed by a reaction.

But because the opium traffic furnishes millions of revenue for Englishmen, millions of Chinese must be sacrificed, and because the sale and distribution of alcohol furnishes million dollar accounts for

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large banks and trust companies, \$100,000.00 fees for corporation attorneys, because it makes it possible to lead large masses of men to the polls for the purpose of voting for political parties which are both morally and politically bankrupt, there are those who would again inflict this deadly curse upon the citizens of our country.

Dr. Woods Hutchinson tells us that the death rate for the United States has fallen in the last three years from 14.2 to 12.3 a thousand, which represents a saving of over 200,000 lives a year since the brewers' business was closed down. "Almost unanimous reports from public school teachers, school and district nurses, welfare workers among the poor, intelligent police chiefs and heads of charitable organizations, show that never, in all their experience, has there

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been so striking an improvement in the feeding, the clothing, the general comfort and welfare of school children as within the last two years."

And yet there are those who favor the modification of the Volstead act. There is probably not a single individual in existence whose thinking processes are in such an infantile stage of development that he does not know that when a door has been partly opened it requires but the pressure of the little finger to push it wide open, so that modification is but another word for annulment with all of its physical, mental, moral and spiritual degradation and disaster, and all of the sorrow, suffering, infamy, shame and horror which this most monstrous curse has inflicted upon suffering humanity.

Experience has decided that any stim-

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ulus applied steadily to the stomach, which raises its muscular tones above the point at which it can be sustained by food and sleep, produces, when it has passed away, debility—a relaxation of the overworked organ, proportioned to its preternatural excitement. The life-giving power of the stomach falls of course as much below the tone of cheerfulness and health, as it was injudiciously raised above it. If the experiment be repeated often, it produces an artificial tone of stomach, essential to cheerfulness and muscular vigor, entirely above the power of the regular sustenance of nature to sustain, and creates a vacuum which nothing can fill but the destructive power which made it; and when protracted use has made the difference great between the natural and this artificial tone, and habit has made

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it a second nature, the man is a drunkard, and in ninety-nine instances in a hundred is irretrievably undone.

Beer has been recommended as a substitute, and a means of leading back the captive to health and liberty. But though it may not create intemperate habits as soon, it has no power to allay them. It will even finish what alcohol has begun, and with this difference only, that it does not rasp the vital organs with quite so keen a file, and enables the victim to come down to his grave by a course somewhat more dilatory, and with more of the good-natured stupidity of the idiot and less of the demoniac frenzy of the madman.

Wine has been prescribed as a means of decoying the intemperate from the ways of death. But habit cannot be thus cheated out of its dominion, nor raven-

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ing appetite be amused down to a sober and temperate demand. It is not true that wine will restore the intemperate, or stay the progress of the disease. Enough must be taken to screw up nature to the tone of cheerfulness, or she will cry, "Give," with an importunity not to be resisted; and long before the work of death is done, wine will fail to minister a stimulus of sufficient activity to rouse the flagging spirits, or will become acid on the enfeebled stomach, and whisky and brandy will be called in to hasten to its consummation the dilatory work of self-destruction.

In one of Tolstoi's essays, we find that the seeing, spiritual being, whose manifestation we commonly call conscience, always points with one end towards right and with the other towards wrong, and we do not notice it while we follow the

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course it shows: the course from wrong to right. But one need only do something contrary to the indication of conscience, to become aware of this spiritual being, which then shows how the animal activity has diverged from the direction indicated by conscience. And as a navigator, conscious that he is on the wrong track, cannot continue to work the oars, engine, or sails, till he has adjusted his course to the indications of the compass, or has obliterated his consciousness of this divergence—each man who has felt the duality of his animal activity and his conscience, can continue his activity only by adjusting that activity to the demands of conscience, or by hiding from himself the indications conscience gives him of the wrongness of his animal life.

All human life, we may say, consists

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solely of these two activities: (1) bringing one's activities into harmony with conscience, or (2) hiding from one's self the indications of conscience in order to be able to continue to live as before.

Some do the first, others the second. To attain the first there is but one means: moral enlightenment—the increase of light in one's self and attention to what it shows; for the second—to hide from one's self the indications of conscience—there are two means: one external and the other internal. The external means consists in occupations that divert one's attention from the indications given by conscience; the internal method consists in darkening conscience itself.

As a man has two ways of avoiding seeing an object that is before him: either by diverting his sight to other,

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more striking objects, or by obstructing the sight of his own eyes—just so a man can hide from himself the indications of conscience in two ways: either by the external method of diverting his attention to various occupations, cares, amusements, or games; or by the internal method of obstructing the organ of attention itself. For people of dull, limited moral feeling, the external diversions are often quite sufficient to enable them not to perceive the indications conscience gives of the wrongness of their lives. But for morally sensitive people those means are often insufficient.

The external means do not quite divert attention from the consciousness of discord between one's life and the demands of conscience. This consciousness hampers one's life: and people, in order to be able to go on living as before, have re-

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course to the reliable, internal method, which is that of darkening conscience itself by poisoning the brain with stupefying substances.

One is not living as conscience demands, yet lacks the strength to reshape one's life in accord with its demands. The diversions which might distract attention from the consciousness of this discord are insufficient, or have become stale, and so—in order to be able to live on, disregarding the indications conscience gives of the wrongness of their life—people stop the activity of the organ through which conscience manifests itself, as a man by covering his eyes hides from himself what he does not wish to see.

Not in the taste, nor in any pleasure, recreation or mirth they afford, lies the cause of the world-wide consumption of

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opium, wine, and tobacco, but simply in man's needs to hide from himself the demands of conscience.

Not only do people stupefy themselves to stifle their own consciences, but when they wish to make others commit actions contrary to conscience, they intentionally stupefy them—that is, arrange to stupefy people in order to deprive them of conscience.

When a fortified place has been captured, the soldiers do not sack it and slay the defenseless old men and children, orders are often given to make them drunk, and then they do what is expected of them.

Everyone knows people who have taken to drink in consequence of some wrongdoing that has tormented their conscience. Anyone can notice that those who lead immoral lives are more at-

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tracted than others by stupefying substances. Bands of robbers, or thieves, cannot live without intoxicants.

In a word, it is impossible to avoid understanding that the use of stupefiers, in large or small amounts, occasionally or regularly, in the higher or lower circles of society, is evoked by one and the same cause, the need to stifle the voice of conscience in order not to be aware of the discord existing between one's way of life and the demands of one's conscience.

In that alone lies the reason of the widespread use of all stupefying substances, and among the rest of tobacco—probably the most generally used and most harmful.

Any smoker may detect in himself the definite desire to stupefy himself with tobacco at certain, specially difficult mo-

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ments. I look back at the days when I used to smoke; when was it that I felt a special need of tobacco? It was always at moments when I did not wish to remember certain things that presented themselves to my recollection, when I wished to forget—not to think. I sit by myself doing nothing and know I ought to set to work, but don't feel inclined to, so I smoke and go on sitting. I have promised to be at someone's house by five o'clock, but I have stayed too long somewhere else; I remember that I have missed the appointment, but I do not like to remember it, so I smoke. I get vexed, and say unpleasant things to someone, and know I am doing wrong, and see that I ought to stop, but I want to give vent to my irritability—so I smoke and continue to be irritable. I play at cards and lose more than I in-

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tended to risk—so I smoke. I have placed myself in an awkward position, have acted badly, have made a mistake, and ought to acknowledge the mess I am in and thus escape from it, but I do not like to acknowledge it, so I accuse others—and smoke. I write something and am not quite satisfied with what I have written. I ought to abandon it, but I wish to finish what I have planned to do—so I smoke. I dispute, and see that my opponent and I do not understand, and cannot understand one another, but I wish to express my opinion so I continue to talk—and I smoke.

Emancipation from this evil will be an epoch in the life of humanity; and that epoch seems to be at hand. The evil is recognized. An alteration has already taken place in our perception concerning the use of stupefying sub-

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stances. People have understood the terrible harm of these things, and are beginning to point them out, and this almost unnoticed alteration in perception will inevitably bring about the emancipation of men from the use of stupefying things—will enable them to open their eyes to the demands of their consciences, and they will begin to order their lives in accord with their perceptions.

Physiology has scientifically demonstrated the connection between the brain and the mind in the well-known experiments of vivisection performed by physiologists on the brains of living animals—which experiments defy all contradiction. The most famous among these experiments are those of the French physiologist Flourens, who experiments on animals whose physical constitution en-

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ables them to endure considerable injuries to cranium and brain.

He cut away the upper portions of the brain, layer by layer, one after another, and it is not saying too much to assert that as the layers disappeared one by one, the mental faculties of the animals diminished at the same time and eventually disappeared altogether.

Thus Flourens succeeded in reducing fowls to a condition in which every mental function and every capacity of receiving sensational impressions or of performing any conscious action were completely annihilated, and yet physical life went on. The animals remained motionless at any spot in which they were placed, as though they were in a deep sleep; they responded to no external stimulus, and were kept alive by artificial feeding; they led, as it were, a

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mere vegetable existence. Thus they remained alive for months and years, and increased in weight and size of the body.

Similar experiments have been successfully performed on higher animals, that is to say, on mammals. "If the cerebral hemispheres of a mammal are cut away piecemeal," says Valentin, "the mental activity descends all the deeper, the further the quantitative loss extends. As a rule, when the ventricles are reached, complete unconsciousness supervenes." What stronger proof of the connection between mind and brain can there exist, than that of the anatomist's scalpel?

WHERE TRUTH ABIDES

Truth is within ourselves; it takes no rise
From outward things, whate'er you may believe,
There is an inmost center in us all,
Where Truth abides in fullness; and around,
Wall upon wall, the gross flesh hems it in,
This perfect clear conception—which is Truth.
A baffling and perverting carnal mesh
Blinds it, and makes all error; and, to know
Rather consists in opening out a way
Whence the imprisoned splendor may escape,
Than in effecting entry for a light
Supposed to be without.

—Robert Browning.

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Part Twelve

THE PSYCHOLOGY OF MEDICINE

TO the development of radio communication is largely due the fillip to the imagination of science and the dawning of an idea which a few years ago would have been considered revolutionary and subversive of all the established traditions of medicine.

“The psychical method has always played an important, though largely unrecognized, part in therapeutics. It is from faith, which buoys up the spirits, sets the blood flowing more freely, and the nerves playing their parts without disturbance, that a large part of all cures arise. Despondency or lack of faith will often sink the stoutest constitution al-

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most to death's door; faith will enable a bread pill or a spoonful of clear water to do almost miracles of healing, when the best medicines have been given over in despair. The basis of the entire profession of medicine is faith in the doctor and his drugs and his methods."

Charles Richet, professor of physiology in the University of Paris, is blazing the trail for those hardy pioneering scientists who are now exploring the borderland of the senses. In a recent address before the International Congress of Physiologists in Edinburgh, as quoted by *The Lancet*, a leading British medical journal, Dr. Richet said:

"The thesis which I wish to sustain and to prove by the experimental method is that there may be a knowledge of reality obtained by other means than by the ordinary channels of the senses.

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Everyone knows that the external world is accessible to us by our senses, by vision, hearing and touch, and to a less extent by smell and taste. No other ways are known. It is the universal opinion that we can have no other notion of the reality that surrounds us except through our five senses, and that any fact must remain forever unknown unless sound, touch or vision has revealed it to us. This is the classic and at the same time popular idea. It is formal and exclusive, without itself ever having been demonstrated. To admit that a knowledge of occurrences can arrive at our consciousness by any other means than those of the senses is a daring and revolutionary proceeding, and yet this is the thesis that I am about to maintain.

“The access to our subconscious intelligence of mysterious vibrations is an

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unusual phenomenon, but it is a phenomenon which is not in contradiction to anything," said Dr. Richet. "It is a new truth, that is all. And this new truth is wonderfully in agreement with the amazing notions which modern physics opens to us. At this moment I cannot hear any concert in this hall, nor do you. You might even assert that there are no musical vibrations here. What a mistake! If a wireless receiver were placed here we should all immediately hear a concert that is taking place perhaps three miles, or even 100 miles away. The receiver proves that the vibrations are present. Thus it is with those mysterious paths of consciousness. They do not reach us, but they are there. Only a sensitive person, in other words, a receiver, is needed to prove their reality. Therefore, do not hesitate to ac-

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cept this new fact that unknown vibrations strike an intelligence and bring to it unexpected knowledge.

“Can physiologists and medical men assert that they have completed the physiology of the brain; that there is nothing further to be discovered about it, and that they have delimited all the modes of vibration of which it is capable? The brain is a much more complicated machine than we are wont to consider it in our innocence. Why may not this marvelous machine be sometimes capable of receiving vibrations which pass unknown to consciousness?”

Our problem would be more simple, and the doctors, with their wide knowledge and splendid service, would have solved the problem long ago, had it been a purely physical one; but unfortunately it is a mental problem long before it

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becomes a physical one; as we continue to exercise our capacity for response we shall find it necessary to treat our thoughts and emotions if we are to establish health upon a firm basis.

For instance, it is commonly recognized that worry or continued negative emotional excitement will disorganize digestion. When the digestion is normal the feeling of hunger will stop, will be inhibited when we have eaten as much as we need, nor will we feel hunger again until we actually require food. In such cases our inhibiting center is working properly. But if we get dyspeptic, this inhibiting center has ceased to function, and we are hungry all the time, with the consequent tendency to overwork an already impaired digestive apparatus. Mankind is continually experiencing such small disturbances. They

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are strictly local and attract but small attention at the great center. They come and go—and properly so—without drawing from the organism as a whole much consideration. But if the disorder has grown out of a deep-rooted cause which cannot easily be removed, disease of a more serious nature will ensue. Under such circumstances, by reason of its seriousness and long continuance, the trouble involves all parts of the organism and may threaten its very life. When it reaches this point, if the administration at the grand center is vigorous and determined and wise, the disturbance cannot long endure; but if there is weakness at that center the whole federation may go down with a crash.

Dr. Lindlahr says that "Nature Cure Philosophy presents a rational concept of evil, its cause and purpose, namely:

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that it is brought on by violation of Nature's laws, that it is corrective in its purpose that it can be overcome only by compliance with the Law. There is no suffering, disease or evil of any kind anywhere unless the law has been transgressed somewhere by someone."

These transgressions of the law may be due to ignorance, to indifference, or to wilfulness and viciousness. The effect will always be commensurate with the causes.

The science of natural living and healing shows clearly that what we call disease is primarily Nature's effort to eliminate morbid matter and to restore the normal functions of the body; that the processes of disease are just as orderly in their way as everything else in Nature; that we must not check or suppress them, but co-operate with them. Thus

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we can, slowly but laboriously, the all-important lesson that "obedience to the law" is the only means of prevention of disease, and the only cure.

The Fundamental Law of Cure, the Law of Action, and Reaction, and the Law of Crisis, as revealed by the Nature Cure Philosophy, impress upon us the truth that there is nothing accidental or arbitrary in the processes of health, disease and cures; that every changing condition is either in harmony or in discord with the laws of our being; that only by complete surrender and obedience to the law can we master the law, and attain and maintain perfect physical health.

In our study of the cause and character of disease we must endeavor to begin at the beginning, and that is LIFE itself; for the processes of health, disease

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and cure are manifestations of that which we call life and vitality.

There are two prevalent, but widely differing conceptions of the nature of life or vital force: the material and the vital.

The former looks upon life or vital force with all its physical, mental and psychical phenomena as manifestations of the electric, magnetic and chemical activities of the physical-material elements composing the human organism. From this viewpoint, life is a sort of "spontaneous combustion," or, as one scientist expressed it, a "succession of fermentations."

This materialistic conception of life, however, has already become obsolete among the more advanced biologists as a result of the discoveries of modern science, which are fast bridging the

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chasm between the material and the spiritual realms of being.

The vital conception of Life or Vital Force on the other hand, regards it as the primary force of all forces, coming from the central source of all power.

This force, which permeates, warms and animates the entire created universe, is the expression of the Divine Will, the Logos, the Word, of the Great Creative Intelligence. It is this Divine Energy which sets in motion the whirls in the ether, the electric corpuscles and ions that make up the different atoms and elements of matter.

These corpuscles and ions are positive and negative forms of electricity. Electricity is a form of energy. It is intelligent energy; otherwise it could not move with that unvarying wonderful precision in the electrons of the atoms

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as in the suns and planets of the sidereal universe.

If this supreme intelligence should withdraw its energy—the electrical charges (forms of energy)—and with it the atoms and elements, the entire material universe, would disappear in the flash of a moment.

From this it appears that crude matter, instead of being the source of life and of all its complicated mental and spiritual phenomena is only an expression of the Life Force, itself a manifestation of the Great Creative Intelligence which some call God, others Nature, the Oversoul, Brahma, Prana, etc., each one according to his understanding.

It is this supreme power and intelligence, acting in and through every atom, molecule, and cell in the human body, which is the true healer, this "*vis*

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medicatrix naturae" which always endeavors to repair, to heal, and to restore the perfect type. All that the physician can do is to remove obstructions and to establish normal conditions, within and about the patient, so that the power within can do its work to the best advantage.

In the final analysis, all things in Nature, from a fleeting thought or emotion to the hardest piece of diamond or platinum, are modes of motion or vibration. A few years ago physical science assumed that an atom was the smallest imaginable part of a given element of matter; that although infinitesimally small, it still represented solid matter. Now, in the light of better evidence, we have good reason to believe that there is no such thing as solid matter; that every atom is made up of charges of negative

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and positive electricity acting in and upon an omnipresent ether; that the difference between an atom of iron and of hydrogen, or any other element, consists solely in the number of electrical charges or corpuscles it contains, and on the velocity with which these vibrate around one another.

Thus the atom, which was thought to be the ultimate particle of solid matter, is found to be a little universe in itself in which corpuscles of electricity rotate or vibrate around one another like the suns and planets in the sidereal universe. This explains what we mean when we say life and matter are vibratory.

What we call "Inanimate Nature" is beautiful and orderly because it plays in tune with the score of the Symphony of Life. Man alone can play out of tune. This is his privilege, or his curse,

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as he chooses, by virtue of his freedom of choice and action.

We can now better understand the definitions of health and of disease, given in the catechism of Nature Cure as follows:

“Health is normal and harmonious vibration of the elements and forces composing the human entity on the physical, mental, moral, and spiritual planes of being, in conformity with the constructive principle of Nature applied to individual life.”

“Disease is abnormal or inharmonious vibration of the elements and forces composing the human entity on one or more planes of being, in conformity with the destructive principle of Nature applied to individual life.”

The question naturally arising here is, “Normal or abnormal vibration with

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what?" The answer is that the vibratory conditions of the organism must be in harmony with Nature's established harmonic relations in the physical, mental, moral, spiritual, and psychical realms of human life and action.

Mental Chemistry

Part Thirteen

MENTAL CHEMISTRY

CHEMISTRY is the science which treats of the intra-atomic or the intra-molecular changes which material things undergo under various influences.

Mental is defined as "of or appertaining to the mind, including intellect, feeling, and will, or the entire rational nature."

Science is knowledge gained and verified by exact observation and correct thinking.

Mental chemistry is, therefore, the science which treats of the changes which conditions undergo through the operations of the mind.

As the transformations which are brought about in applied chemistry are

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the result of the orderly combination of materials, it follows that mental chemistry brings about results in a like manner.

Any conceivable number may be formed with the arabic numerals 1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

Any conceivable thought may be expressed with the 26 letters of the alphabet.

Any conceivable thing can be organized with the 14 elements and always and only by the proper grouping of electrons into molecules.

When two or more molecules are grouped a new individuality is created, and this individuality which has been called into being possesses characteristics which are not possessed by either of the elements which gave it being.

Thus one atom of sodium and one

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of chlorine give us salt, and this combination alone can give us salt, and no other combination of elements can give us salt, and salt is something very different from either of the elements of which it is composed.

What is true in the inorganic world is likewise true in the organic—certain conscious processes will produce certain effects, and the result will invariably be the same. The same thought will always be followed by the same consequence, and no other thought will serve the purpose.

This must necessarily be true because the principle must exist independently of the organs through which they function. Light must exist—otherwise there could be no eye. Sound must exist—otherwise there could be no ear. Mind

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must exist—otherwise there could be no brain.

Mental action is therefore the interaction of the individual upon the Universal Mind, and as the Universal Mind is the intelligence which pervades all space and animates all living things, this mental action and reaction is the law of causation.

It is the Universal Chemist, but the principle of causation does not obtain in the individual mind but in the Universal Mind. It is not an objective faculty but a subjective process.

The individual may, however, bring the power into manifestation and as the possible combinations of thought are infinite, the results are seen in an infinite variety of conditions and experiences.

Primordial man, naked and bestial, squatting in gloomy caverns, gnawing

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bones, was born, lived, and died in a hostile world. His hostility and his wretchedness arose from his ignorance. His handmaidens were Hate and Fear. His sole reliance was his club. He saw in the beasts, forests, torrents, seas, clouds, and even in his fellow man, only enemies. He recognized no ties binding them one to another or to himself.

Modern man is born to comparative luxury. Love rocks his cradle and shields his youth. When he goes forth to struggle he wields a pencil, not a club. He relies upon his brain, not his brawn. He knows the physical as neither master nor equal, but as a useful servant. His fellow men and the forces of Nature are his friends—not his enemies.

These tremendous changes, from hate to love, from fear to confidence, from

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material strife to mental control, have been wrought by the slow dawn of Understanding. In direct proportion as he understands Cosmic Law is man's lot enviable or the reverse.

Thought builds organic structures in animals and men. The protoplasmic cell desires the light and sends forth its impulse; this impulse gradually builds an eye. A species of deer feed in a country where the leaves grow on high branches, and the constant reaching for their favorite food builds cell by cell the neck of the giraffe. The amphibian reptiles desire to fly in the open air above the water; they develop wings and become birds.

Experiments with parasites found on plants indicate that even the lowest order of life makes use of mental chemistry. Jacques Loeb, M. D., Ph. D., a

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member of the Rockefeller Institute made the following experiment: "In order to obtain the material, potted rose bushes are brought into a room and placed in front of a closed window. If the plants are allowed to dry out, the aphides (parasites), previously wingless, change to winged insects. After the metamorphosis, the insects leave the plants, fly to the window and then creep upward on the glass."

It is evident that these tiny insects found that the plants on which they had been thriving were dead, and that they could therefore secure nothing more to eat and drink from this source. The only method by which they could save themselves from starvation was to grow temporary wings and fly, which they did.

That the brain cells are directly affected by mental pictures, and that the

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brain cells in their turn can affect the entire being, was proven by Prof. Elmer Gates of the Smithsonian Institution at Washington. Guinea pigs were kept in enclosures with certain colors dominant; dissection showed their brains to be larger in the color area than those of the same class of guinea pigs kept in other enclosures. The perspiration of men in various mental moods was analyzed, and the resultant salts experimented with. Those of a man in an angry state were of an unusual color; a small portion put on the tongue of a dog produced evidences of poisoning.

Experiments at Harvard College with students on the weighing board proved that the mind moves the blood. When the student was told to imagine that he was running a foot race, the board sank down at the foot, and when a problem in

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mathematics was being worked the balanced board sank down at the head.

This shows that thought not only flashes constantly between mind and mind, with an intensity and swiftness far transcending electricity, but that it also builds the structures through which it operates.

Through the conscious mind we know ourselves as individuals, and take cognizance of the world about us. The subconscious mind is the storehouse of past thoughts.

We can understand the action of the conscious and subconscious minds by observing the process by which the child learns to play the piano. He is taught how to hold his hands and strike the keys, but at first he finds it somewhat difficult to control the movement of his fingers. He must practice daily, must

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concentrate his thoughts upon his fingers, consciously making the right movements. These thoughts, in time, become subconscious, and the fingers are directed and controlled in the playing by the subconsciousness. In his first months, and possibly first years of practice, the pupil can perform only by keeping his conscious mind centered upon the work; but later he can play with ease and at the same time carry on a conversation with those about him, because the subconscious has become so thoroughly imbued with the idea of right movements that it can direct them without demanding the attention of the conscious mind.

The subconscious is instinctive desire. It carries out what is suggested by the conscious mind. These suggestions it carries out faithfully, and it is this close relation between the conscious and sub-

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conscious which makes conscious thinking so important.

Man's organism is controlled by the subconscious thought; circulation, breathing, digestion, and assimilation are all activities controlled by the subconscious. The subconscious is continually getting its impulses from the conscious, and we have only to change our conscious thought to get a corresponding change in the subconscious.

We live in a fathomless sea of plastic mind substance. This substance is ever alive and active. It is sensitive to the highest degree. It takes form according to the mental demand. Thought forms the mold or matrix from which the substance expresses. Our ideal is the mold from which our future will emerge.

The Universe is alive. In order to

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express life there must be mind ; nothing can exist without mind. Everything which exists is some manifestation of this one basic substance from which and by which all things have been created and are continually being recreated. It is man's capacity to think that makes him a creator instead of a creature.

All things are the result of the thought process. Man has accomplished the seemingly impossible because he has refused to consider it impossible. By concentration men have made the connection between the finite and the Infinite, the limited and the Unlimited, the visible and the Invisible, the personal and the Impersonal.

Great musicians have succeeded in thrilling the world by the creation of divine rhapsodies. Great inventors have made the connection and startled the

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world by their wonderful creations. Great authors, great philosophers, great scientists have secured this harmony to such an extent that though their writings were created hundreds of years ago, we are just beginning to realize their truth. Love of music, love of business, love of creation caused these people to concentrate, and the ways and means of materializing their ideals slowly but surely developed.

Throughout the entire Universe the law of cause and effect is ever at work. This law is supreme; here a cause, there an effect. They can never operate independently. One is supplementary to the other. Nature at all times is endeavoring to establish a perfect equilibrium. This is the law of the Universe and is ever active. Universal harmony is the goal for which all nature strives.

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The entire cosmos moves under this law. The sun, the moon, the stars are all held in their respective positions because of harmony. They travel their orbits, they appear at certain times in certain places, and because of the precision of this law, astronomers are able to tell us where various stars will appear in a thousand years. The scientist bases his entire hypothesis on this law of cause and effect. Nowhere is it held in dispute except in the domain of man. Here we find people speaking of luck, chance, accident, and mishap; but is any one of these possible? Is the Universe a unit? If so, and there is law and order in one part, it must extend throughout all parts. This is a scientific deduction.

Like begets like on every plane of existence, and while people believe this more or less vaguely, they refuse to give

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it any consideration where they are concerned. This is due to the fact that heretofore man could never realize how he set certain causes in motion which related him with his various experiences.

It is only in the past few years that a working hypothesis could be formulated to apply this law to man—the goal of the Universe is harmony. This means a perfect balance between all things.

Ether fills all interplanetary space. This more or less metaphysical substance is the elementary basis of all matter. It is upon this substance that the messages of the wireless are transmitted through space.

Thought dropped into this substance causes vibrations which in turn unite with similar vibrations and react upon the thinker. All manifestations are the

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result of thought—but the thinking is on different planes.

We have one plane of thought constituting the animal plane. Here are actions and interactions which animals respond to, yet men know nothing of. Then we have the conscious thought plane. Here are almost limitless planes of thought to which man may be responsive. It is strictly the nature of our thinking that determines to which plane we shall respond. On this plane, we have the thoughts of the ignorant, the wise, the poor, the wealthy, the sick, the healthy, the very poor, the very rich, and so on. The number of thought planes is infinite, but the point is that when we think on a definite plane, we are responsive to thoughts on that plane, and the effect of the reaction is apparent in our environment.

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Take for example one who is thinking on the thought plane of wealth. He is inspired with an idea, and the result is success. It could not be otherwise. He is thinking on the success plane, and as like attracts like, his thoughts attract other similar thoughts, all of which contribute to his success. His receiver is attuned for success thoughts only, all other messages fail to reach his consciousness, hence, he knows nothing of them; his antennæ, as it were, reach into the Universal Ether and connect with the ideas by which his plans and ambitions may be realized.

Sit right where you are, place an amplifier to your ear, and you may hear the most beautiful music, or a lecture, or the latest market reports. What does this indicate, in addition to the pleasure derived from the music or the informa-

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tion received from the lecture or market reports?

It indicates first that there must be some substance sufficiently refined to carry these vibrations to every part of the world. Again it indicates that this substance must be sufficiently refined to penetrate every other substance known to man. The vibrations must penetrate wood, brick, stone or steel of any kind. They must go over, through and under rivers, mountains, above the earth, under the earth, everywhere and anywhere. Again it indicates that time and space have been annihilated. The instant a piece of music is broadcasted in Pittsburgh or anywhere else, by putting the proper mechanism to your ear you can get it as clearly and distinctly as though you were in the same room. This indicates that these vibrations proceed in

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every direction; wherever there is an ear to hear, it may hear.

If then there is a substance so refined that it will take up the human voice, and send it in every direction so that every human being who is equipped with the proper mechanism may receive the message, is it not possible that the same substance will carry a thought just as readily and just as certainly? Most assuredly. How do we know this? By experimentation. This is the only way to be certain of anything. Try it. Make the experiment yourself.

Sit right where you are. Select a subject with which you are fairly familiar. Begin to think. The thoughts will follow each other in rapid succession. One thought will suggest another. You will soon be surprised at some of the thoughts which have made you a chan-

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nel of their manifestation. You did not know that you knew so much about the subject. You did not know that you could put them into such beautiful language. You marvel at the ease and rapidity with which the thoughts arrive. Where do they come from? From the One Source of all wisdom, all power, and all understanding. You have been to the source of all knowledge, for every thought which has ever been thought is still in existence, ready and waiting for someone to attach the mechanism by which it can find expression. You can therefore think the thoughts of every sage, every artist, every financier, every captain of industry who ever existed, for thoughts never die.

Suppose your experiment is not entirely successful; try again. Few of us

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are proud of our first effort at anything. We did not even make a very great success in trying to walk the first time we tried. If you try again, remember that the brain is the organ of the objective mind, that it is related to the objective world by the cerebro-spinal or voluntary nervous system; that this system of nerves is connected with the objective world by certain mechanism or senses. These are the organs with which we see, hear, feel, taste, and smell. Now, a thought is a thing which can neither be seen, nor heard; we cannot taste it, nor can we smell it, nor can we feel it. Evidently the five senses can be of no possible value in trying to receive a thought. They must therefore be stilled, because thought is a spiritual activity and cannot reach us through

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any material channel. We will then relax both mentally and physically and send out an S. O. S. for help and await the result. The success of our experiment will then depend entirely upon our ability to become receptive.

Scientists like to make use of the word Ether in speaking of the substance "In which we live and move and have our being," which is Omnipresent, which impenetrates everything, and which is the source of all activity. They like to use the word Ether because Ether implies something which can be measured and so far as the materialistic school of scientists is concerned, anything which cannot be measured does not exist; but who can measure an electron? And yet the electron is the basis for all material existence, so far as we know at present.

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It would require 500,000,000 atoms placed side by side to measure one linear inch. A number of atoms equal to twenty-five million times the population of the earth must be present in the test tube for a chemist to detect them in a chemical trace. About 125 septillions of atoms are in an inch cube of lead. And we cannot come anywhere near even seeing an atom through a microscope!

Yet the atom is as large as our solar system compared to the electrons of which it is composed. All atoms are alike in having one positive central sun of energy around which one or more negative charges of energy revolve. The number of negative electrons each atom contains determines the nature of the so-called "element" of which it is a part.

An atom of hydrogen, for instance, is

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supposed to have one negative electron as a satellite to its positive center. For this reason chemists accept it as a standard of atomic weight. The atomic weight of hydrogen is placed at 1.

The diameter of an electron is to the diameter of the atom as the diameter of our Earth is to the diameter of the orbit in which it moves around the sun. More specifically, it has been determined that an electron is one-eighteen-thousandth of the mass of a hydrogen atom.

It is clear therefore that matter is capable of a degree of refinement almost beyond the power of the human mind to calculate. We have not as yet been able to analyze this refinement beyond the electron, and even in getting thus far have had to supplement our physical observation of effects with imagination to cover certain gaps.

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The building up of Matter from Electrons has been an involuntary process of individualizing intelligent energy.

Food, water and air are usually considered to be the three essential elements necessary to sustain life. This is very true, but there is something still more essential. Every time we breathe we not only fill our lungs with air which has been charged with magnetism by the Solar Orb, but we fill ourselves with Pranic Energy, the breath of life replete with every requirement for mind and spirit. This life giving spirit is far more necessary than air, food, or water, because a man can live for forty days without food, for three days without water, and for a few minutes without air; but he cannot live a single second without Ether. It is the one prime es-

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stantial of life, and contains all the essentials of life, so that the process of breathing furnishes not only food for body building, but food for mind and spirit as well.

Though an inheritance of acres may be bequeathed, an inheritance of knowledge and wisdom cannot. The wealthy man may pay others for doing his work for him, but it is impossible to get his thinking done for him by another, or to purchase any kind of self-culture.