

PANCOAST'S TOKOLOGY

— AND —

Ladies' Medical Guide.

A COMPLETE INSTRUCTOR IN ALL THE DELICATE AND
WONDERFUL MATTERS PERTAINING TO WOMEN.

*FULLY EXPLAINING THE NATURE AND
MYSTERY OF*

**The Reproductive Organs of Both Sexes
and Love, Courtship and Marriage.**

— ALSO —

*Pregnancy, Labor and Childbirth, and the
Causes, Symptoms and Treatment
of diseases of Women and Children*

BESIDES SPECIAL CHAPTERS ON THE CHANGE OF LIFE, HOW TO RETAIN
HEALTH AND LIVE LONG, WHAT AND HOW TO EAT, HOW
TO BEAUTIFY THE BODY, SUGGESTIONS FOR THE TOILET, ETC.

WITH MANY ILLUSTRATIONS

By S. PANCOAST, M. D.,

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Penn. Medical University, Philadelphia. Author of "Bright's Disease
and its Treatment," etc.

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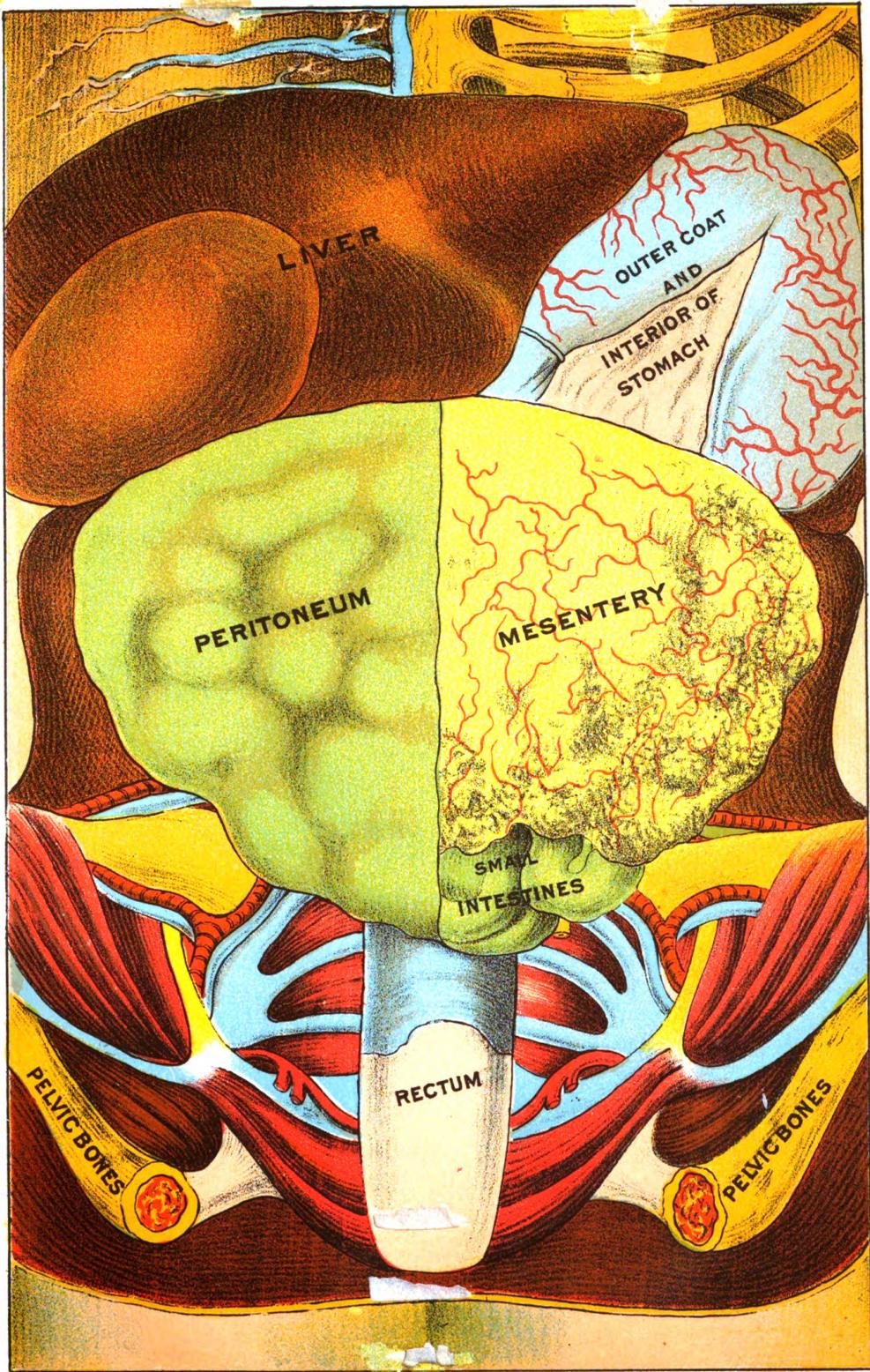
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S. Parcoast M.D.



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TO THE
MOTHERS AND DAUGHTERS
OF THE
UNITED STATES OF AMERICA

THIS INSTRUCTIVE TREATISE ON THE STRUCTURE AND FUNCTIONS OF
THE REPRODUCTIVE ORGANS, DISEASES OF WOMEN
AND CHILDREN, THE TOILET, ETC.

SCIENTIFICALLY CONSIDERED
IN REFERENCE TO

HEALTH, BEAUTY AND LONGEVITY

UNDERTAKEN AT THE SUGGESTION OF MANY LADIES AND PROMOTED
BY THEIR ENCOURAGEMENT, IS MOST RESPECTFULLY INSCRIBED,
BY THEIR SINCERE FRIEND AND WELL WISHER,

THE AUTHOR



STATUE OF VENUS.
THE IDEAL OF PHYSICAL BEAUTY.

DESCRIPTION OF PLATES.

A PICTURE OF HEALTH AND BEAUTY.

This exquisitely beautiful and artistically executed plate presents a young woman in the enjoyment of perfect health. Mark the graceful and artistic yet perfectly natural features, note the perfect lines, the healthy compressed lips, the large bright eye, the rosy complexion, the wealth of golden hair, the noble expression, and the natural fullness of the figure, making an enchanting picture of all that is lovely in the human form. Observe the open countenance, how true to nature, how life-like; with no signs of mental decrepitude or exhaustion of any vital forces in the expression of this ruddy and healthy face. It is, as its name implies, "A picture of health and beauty."

COMPARATIVE FORM AND SIZE OF THE MALE AND FEMALE.

This realistic and accurate representation of the male and female, affords an opportunity for the study of their comparative anatomy. Mark the rough muscular form of the male, denoting physical strength and endurance, while the features of the female are perfectly smooth, round, and symmetrical, implying grace, delicacy, and general beauty.

INTERNAL ORGANS OF THE CHEST AND PELVIS.

The attention is fixed in wonder at the marvelous mechanism revealed in this artistic plate. It brings before one's vision the beautiful proportions and symmetry of the female form, and presents some of the most wonderful and important internal organs in their natural positions; it presents a charming picture of loveliness and beauty. Mark the exquisite proportions, the symmetrical figure, the perfect mold and outlines. Our able artist has in the execution of this magnificent plate displayed rare skill and technical

anatomical ability. Observe the lungs, the kidneys, the base of the womb and fallopian tubes with their ovaries exposed. These indeed are organs of paramount importance and of which the author has much to teach in the course of this work.

AN IMPREGNATED WOMB AT FOUR MONTHS.

This artistic illustration gives an accurate and faithful representation of a vertical section of the uterus at four months' gestation. The forefinger is passed into the vagina to neck of the womb for examination of its opening or mouth, which is frequently the seat of inflammations and consequent suffering. It is about this stage of pregnancy (four and a half months) that the first movement of the foetus or "quickening," is perceived.

A FOETUS AT THREE MONTHS.

This artistically executed drawing presents a foetus inclosed in the membranes which form a sac containing the fluid in which the foetus is suspended during its entire course of development. How wonderful are the laws of nature! and yet how essential for the propagation of life. This is an excellent illustration of this early stage of foetal life, and reflects much credit on our able artist.

AN IMPREGNATED WOMB AT EIGHT MONTHS.

This artistic plate presents a perfect illustration of an impregnated womb. A vertical section of the organ has been made showing the membranes or envelope in which the foetus is secreted, suspended in the fluid which gives to the membranes the rounded appearance. Emerging at its posterior surface is seen a portion of the intestines. The forefinger is passed through the vagina to the mouth of the womb, which is partially dilated. This dilatation, at the time of birth, is complete. These carefully-executed draw-

ings, if well studied, will serve to enlighten the reader much on these important subjects.

SECTION OF AN IMPREGNATED WOMB.

This plate presents an exact view of the interior of the womb soon after impregnation. It shows a very early stage of embryonic life, the foetus being inclosed in the membranes, where it remains suspended in the fluid during its development.

UTERUS AT TIME OF BIRTH.

This beautiful and instructive plate presents the gravid womb in its true form and position at the time of labor. The membranes containing the fluid in which the foetus is suspended are slightly protruding down and out of the mouth of the womb, which is now fully dilated to afford exit for the child. On the surface of the womb may be seen the fallopian tube. All the blood-vessels are engorged with blood, and the organ is ready to expel its contents.

TWINS AT TIME OF BIRTH.

This beautiful plate presents a carefully-executed drawing of twins at time of birth, the one being a head presentation, the other a breech presentation.

The blue line denotes the placenta and umbilical cord; the red margin, a section of the womb.

The next chart shows a natural position at time of birth. This position is fortunately the most common, and is rarely attended with much trouble. The blue line, which presents a twisted appearance, represents the cord; the red margin, the womb. The womb being a muscular organ, it contracts from above downward during labor, and thus expels its contents. It is these muscular contractions and the dilatation of the mouth that causes what is known as "labor pains."

ORGANS OF GENERATION.

The next chart presents some very important organs, of which little has ever been said in works of this kind, viz., the VAGINA, URETHRA, CLITORIS, and HYMEN.

Our artist has here again displayed faithful fidelity to nature,, and deserves the highest encomium for the careful and successful execution of this interesting and important illustration of these more minute organs. The hymen, which is a thin, semi-lunar fold of mucous membrane, is stretched across the lower part of the orifice of the vagina. It is still supposed by many to exist only in virgins, and to be the only evidence of virginity; but modern scientific knowledge refutes this idea. A careful study of these drawings will be of invaluable interest in connection with the full history of them, given in this work.

The urethra, or rather the orifice of the urethra (*meatus urinarius*), which is so artistically shown in this diagram, is situated at the back part of the vestibule, about an inch below the clitoris, and near the margin of the vagina. Below this orifice of the urethra will be seen the orifice of the vagina—an elliptical aperture, somewhat closed in the vagina by the hymen. The urethra is the outlet for the urine.

How wonderfully artistic, yet how strikingly natural, is shown the clitoris. This small organ is an erectile structure, analogous to that of the *male organ*. It is partially hidden by the labia minora, and in consequence the gland or outer extremity only is seen. It is an elongated organ, and is highly sensitive.

THE PERINEUM.

The next plate presents the back portion, or posterior view of the perineum, the anatomy of which is too complex for the general reader. Suffice it to say here that it is a muscular structure, forming a thin layer. It is subject to laceration in labor, in which case the ruptured edges should

immediately be brought together, and held in position by stitches until reunited.

THE BLADDER.

The next chart shows the bladder and part of the vagina. This important muscular organ, the reservoir for the urine, is situated in the pelvic cavity, the uterus and vagina intervening between it and the rectum in the female. Its shape, position, and relations are greatly influenced by age. It is said to be larger in the female than in the male, is about five inches in length, and three inches across, and the ordinary amount which it contains is about a pint. It is composed of four coats, and is frequently the seat of painful inflammations.

Another well-executed drawing presents the human seminal fluid. The small objects seen are the spermatozoa, greatly magnified. They are the essential agents in producing fecundation. The movement of these minute bodies are remarkable, and consist of a lashing or undulatory motion of the tail. A detailed history of them is given in this work.

No more interesting chart could meet the eye of the intelligent reader than the one next to be considered. We have presented here the vagina, the womb, and the fallopian tubes containing the ovaries. These structures are important, not only on account of their complex functions, but also on account of the numerous diseases to which they are subject. On the left may be seen a vertical section of the ovary. A careful study of these subjects may tend to avert much suffering.

THE WOMB (UTERUS.)

is a strong muscular organ, pear-shaped in the virgin, situated in the pelvic cavity between the bladder and the rectum, and projecting into the upper end of the vagina below. It receives the fecundated ovum in its cavity, retaining and supporting it during the entire stage of development

of the foetus, and is the principal agent in its expulsion at the time of parturition. It measures about three inches in length, two inches in breadth at upper part, and about an inch in thickness. Its form, size, and position varies at different periods of life, and under different circumstances. It is composed of three coats, viz.: an external serous coat, a middle or muscular layer, and an internal mucous coat.

THE VAGINA.

The vagina is a membranous canal, extending from the vulva to the uterus. It is situated behind the bladder and in front of the rectum. It is cylindrical in shape, and its walls are ordinarily in contact with each other. Its length is about four inches. It consists of a muscular coat, a layer of erectile tissue, and an internal mucous lining.

THE LIVER.

is a large glandular organ, situated in the right hypochondriac region. It is the largest gland in the body, weighing from three to four pounds. It is divided into five lobes, and is intended mainly for the secretion of the bile, but effects also important changes in certain constituents of the blood in their passage through this wonderful gland.

THE STOMACH.

The next plate presents the stomach, a most wonderful organ, and, in order that it may be better demonstrated, both the outer and inner coats are presented. It is the principal organ of digestion. Its size varies considerably in different subjects. Its transverse diameter is about twelve inches; its vertical diameter about four inches, and its weight about four and one-half ounces. It consists of four coats, viz.: a serous, a muscular, a cellular, and a mucous coat, and is supplied with blood-vessels and nerves.

The peritoneum is a serous membrane, which partially

invests all the viscera contained in the abdominal and pelvic cavities, and is frequently subject to important inflammation called "peritonitis."

THE MESENTERY.

The mesentery is a broad fold of peritoneum which serves to retain the small intestines in their position and contains between its layers vessels, nerves, and glands.

The small intestines are that portion of the alimentary canal in which the chyme is mixed with the bile, the pancreatic juice and the secretions of the various glands imbedded in the mucous membranes of the intestines, where the separation of the nutritive principle of the food is effected, which constitutes chylification. The small intestines are about twenty feet in length, the walls are composed of four coats; a serous, a muscular, or cellular, and a mucous coat, and are supplied with vessels and nerves.

THE RECTUM.

The rectum is the terminal part of the large intestines. It is from six to eight inches in length, and, like the small intestines, has four coats.

PUBLISHER'S | PREFACE.

THE eminent ability and professional skill of Dr. Pancoast, the author of this work, are too widely and favorably known in every country to require at the hands of the publishers more than a passing word of commendation. His name has for years been a synonym of strength and success in the practice of medicine—especially so in the diseases of women, to which he has devoted many years of his active life; and many are the ladies who to-day owe to his wonderful skill the blessings of health and happiness.

Dr. Pancoast having his mind early drawn to the physical perfection and beauty of women, gave careful and erudite study to the subject in all its intricate bearings and phases. He lectured on the subject, wrote about it, and availed himself of the many valuable suggestions of his professional colleagues, equally skilled with himself. He studied closely every author who had previously written upon the subject, and thus thoroughly mastered its every detail.

Duly appreciating woman's instinctive modesty, he felt that she should have at hand a reliable instructor, safe counsellor and wise friend—one that she could consult with the utmost freedom in her hours of pain and distress. Thoroughly imbued with this idea, he deemed it his duty to give to her the benefits of his ripe experience and the best results of his practical skill. Hence this work.

PREFACE.

THE present work will be found one of delicate and peculiar interest to every female interested in the health, beauty, longevity, happiness, and general well-being of her sex. It has been written at the especial request of numerous matrons to supply a *desideratum* in medical literature, in respect to the functions and diseases of the Female Organs of Generation.

As the subject of Generation and Procreation is one that must ever largely engross the public mind, particularly every married female anxious for the preservation of her own physical perfection from the exhausting drains upon the *vis vite* of the animal economy through gestation, excessive parturition, lactation, etc., the matter of the *Prevention of Conception*—the production of vigorous and healthy offspring—and the removal of the many complicated disorders incident to women and children—should be handled with extreme caution and delicacy by the medical practitioner, whether in the regular routine of his profession, or in giving to the world any treatise or published work on such important elements of human health and longevity. The author, accordingly, takes up the subject in all its intricate bearings, with no little moral diffidence, and with a full consciousness of the responsibilities involved in the faithful execution of his obligations to the female sex and general society. He, however, deems it high time some really *scientific* work should be interposed, in order to render nugatory the prurient and imbecile efforts of medical pretenders who have, of recent years, flooded the country with unreliable literature. He is therefore emboldened to appear

in the literary arena, and proclaim those solemn and important *truths* that so nearly affect the vital interests of the entire human race.

Enjoying advantages possessed, perhaps, by few other physicians in the United States, in respect to information of this peculiar character, the author can safely say that all that is known of a *truthful and reliable* nature will be found embraced in this volume. The book is not intended alone for the female sex, but is a work which every intelligent physician will find an invaluable acquisition to his library, as a reference and guide in his general practice in all complaints and peculiarities incident to females especially.

In these days of progressive intelligence, the author is happy to perceive that the pseudo-modesty which prevailed a few years ago, in regard to subjects pertaining to the sexual organism, is rapidly wearing away, while the glorious science of Physiology in connection with Hygienic information is being universally entertained, as a means by which man may "*know himself*," and realize something of the sublime mysteries and phenomena of his physical and spiritual existence. In truth, *Nature* is ever immaculate, and abhors everything which is repugnant to her pure and simple laws. She has no secrets that may not be revealed to all—whether male or female—none that should ever cause the cheeks of the "pure in heart" to mantle with the crimson hue of shame—none to make man hang his head and fear to contemplate the attributes and perfection of Deity's most elaborate and exquisite piece of workmanship—*man* himself.

The portion of this work devoted to pregnancy will be found full and pertinent, yet lucid and concise—giving advice to females, showing what course they should pursue during that period, as well as after the child is born, together with much valuable information in regard to the management of infants.

All the prominent diseases of females are noted, the symptoms given, and the means for their cure and amelioration

suggested and presented, in order that females generally may be enabled to treat themselves, except in obstinate and complicated maladies.

The chapter devoted to the Female Toilet will be found most useful and attractive to the sex, presenting many curious facts not to be obtained from any other source, while giving remedies for beautifying the skin, etc., that have been tested and approved by many ladies of high rank and fashion in all parts of the world.

A reference to the title of the chapters and to the list of engravings will more fully explain the object and character of this volume. The author believes that it is the most complete work of the kind that has ever appeared. Its matter is intensely absorbing, and can scarcely fail to be highly appreciated by every discreet and intelligent lady into whose hands this *morceau* may fall. If the author can succeed in his present effort to increase the *stamina* of the female organism, strengthen her vital powers, insure her general good health and longevity, elevate her character as mother, wife, sister, friend, and companion, and add aught of embellishment to her natural dignity, grace, and loveliness of physical and intellectual attributes, he will have achieved honors and triumphs sufficient to satisfy his highest ambition as a well-meaning philanthropist, and ardent admirer of pure and lovely *woman*, "Heaven's last best gift to man." He feels, in sooth, that he may safely leave this work on Kalogynomial Pathology in their hands, and await the verdict of a favorable appreciation of his humble labor in their behalf.

S. PANCOAST, M. D.

PREFACE

TO THE

REVISED EDITION.

THE revision of the "Ladies' New Medical Guide" has been chiefly a rearrangement of its chapters and additions to its already rich fund of information. The collection of facts contained in the original edition surpasses anything ever attempted by any other writer upon this class of topics. These facts are so plainly expressed and so fully explained that it would be impossible to present them in better form. With the additions that have been made by the revising editor, this volume now embraces every subject of known interest and value to womankind regarding her physical being and its care and relationship.

The acquisition of knowledge is always elevating, and womankind can derive only good from becoming acquainted with her true self—physical and mental. When such a work as this present volume can be so readily obtained, it is a great error for anyone to remain in ignorance of the facts which are of such vital importance to human existence.

This seems to be the era of woman's equality with man in all things,—mercantile, professional, intellectual, educational and physical; and the eagerness with which she reaches out for physiological information, and the persistency with which she endeavors to develop her body, betoken the early possibility of her physical superiority.

The information contained in this volume can be relied upon as absolutely accurate, and its acquisition is the greatest educational gift that can be offered to women of all ages—from maidenhood to old age. It teaches the young the mysteries of their being in chaste and truthful language,

and enables them to learn the beautiful facts of procreation as they should be known, free from the inaccuracies and exaggerations that are usually preëminent. For the middle aged it serves as a faithful guide for the preservation of health and the proper rearing of offspring; and following its instructions will enable women to refrain from the use of injurious drugs and to avoid the horrible mutilations of needless surgical operations that are so frequently forced upon them. For those about to enter upon the period of old age it is invaluable; aiding them to prepare for the important changes in their organisms and to insure for themselves peace and comfort in their declining years.

This is truly a Ladies' New Medical Guide and its careful perusal is urged upon everyone desirous of obtaining and preserving knowledge, health and happiness.

DR. WM. WESLEY COOK.

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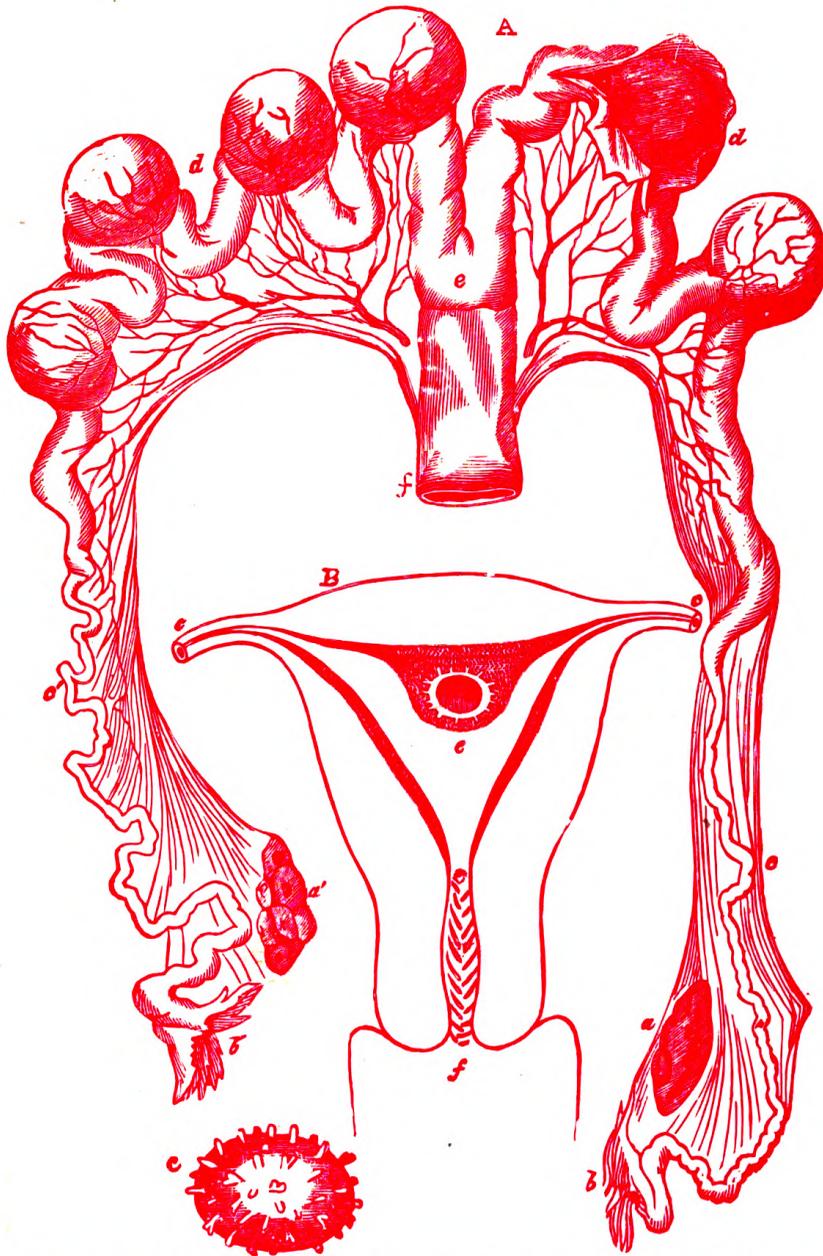
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INTRODUCTION

To trace the Ariadnean thread of Physiology and Pathology, and develop the mysterious elements which constitute the *vis medicatrix* of the human organism—insuring buoyant health, vigorous physical and intellectual powers, grace, symmetry, elasticity, and every other functional attribute of the human being—is a task which has been undertaken by medical men, philosophers and savants in all ages of the world. Much accordingly is known of the secret and silent workings of Nature—much of the relative phenomena of spirit and matter, as dependent and mutual adjuncts of human existence, constituting a sound mind and a perfect animal organization. Yet, with all our knowledge, we are far from understanding the *true* means by which manly strength and womanly beauty may be maintained in pristine superiority or normal glory and fullness, in accordance with some *definite* or *specific* standard of human longevity and procreation. The ancient Greeks and Romans possessed sound and rational views in respect to the nature and functions of the human being, and instituted many valuable laws and regulations calculated to ensure a hardy race, and the most exalted mental and physical perfection, as well of the feminine as masculine sex. The more modern Germans, also, had similar institutions intended for the highest development of man, while the people of Great Britain to this day retain much of the stamina inherent of their lusty progenitors of Saxon and Norman origin. The contrast especially between the physical attributes of the females of the Albion Isle and those of the United States is eminently in favor of the former. England is renowned for at least three distinct characteristics, as exhibited in the graceful vigor of her trees, the symmetry and fleetness of her horses, and the brilliant *vis vitæ* and exuberant loveliness of her women. The

most beautiful women in the world are found in the realms of the British Empire. Other nations have their lovely women, it is true, but they are exceptions rather than a general rule to what should be the universal law of normal health and grace. There can certainly be no good and sufficient reason why the fair daughters of Columbia should fall so lamentably behind their trans-Atlantic sisters and cousins, if not in intellectual qualities, at least in the essential elements of perfectly developed womanhood. The cause of this inferiority of American females is undoubtedly owing to their improper physical training during the adnascent period of life—to premature marriages—to the cares of too early maternity—to the foolish and ridiculous conventionalities of society—to absurd customs, unjust laws, and a lack of a due appreciation of what should constitute the sphere of the sex, as the procreant instrument for the perpetuation of the human race, agreeably to the sublime injunction and ordinances of the Great Creator and Law-giver of Universal Nature.

Nature, indeed, has implanted in the human breast a delicate sense of perception of the beautiful in general creation; but of all other forms of loveliness, there is none that so much delights and enchants the soul of man as the beauty of the human female. It absorbs the ideal dream of the sculptor and the painter, while many a modern *Praxiteles* and *Apelles* vie with each other to produce such models of perfection as the glorious sculpture of the one and the admirable picture of Venus Anadyomene of the other, both of which masterpieces of art excited the most remarkable enthusiasm among the Greeks. It was from a public exhibition of a most beautiful and perfectly-formed woman named Phryne that each of these works was achieved. The Venus of Praxiteles especially was a *chef d'œuvre* of human imitation. It was so remarkably *true to nature* that the people of the celebrated city of Gnidus fancied that the marble moved, that it seemed to speak, while the illusion was so



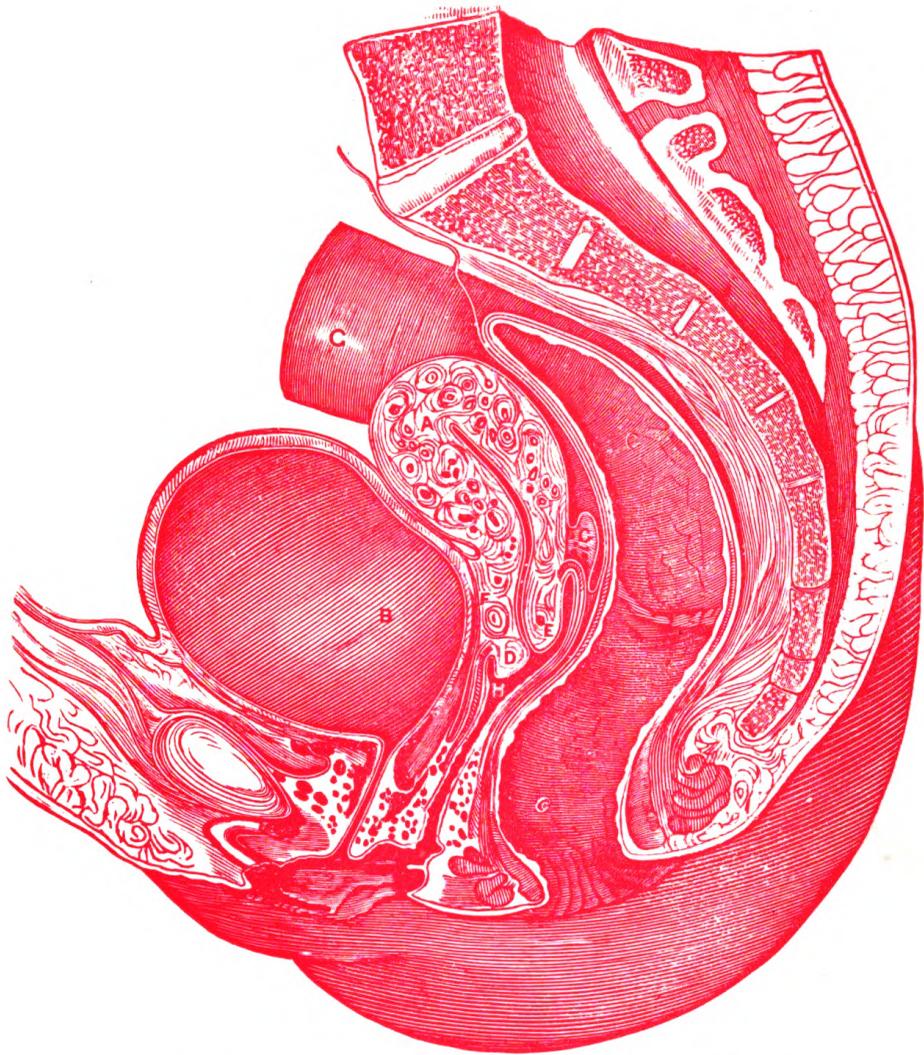
RELATION OF OVARIES, OVUM, OVADUCT, AND UTERUS IN MAMMALIA

A. Reproductive organs of the rabbit, ten days advanced in pregnancy; *a a*, right and left ovaries, four corpora lutea in the right and two in the left; *b b* fimbriated openings of the Fallopian tubes; *c c*, the Fallopian tubes; *d d*, right and left cornua of the uterus, with four dilatations on the right and two on the left containing ova, one of the right ova is exhibited by a division in the left horn of the uterus, *e*, the body of the uterus; *f*, the vagina.

B. Transverse section of the human uterus twelve or fourteen days after conception; *c*, the uterine cavity, in which the ovum with its villous chorion is imbedded in the decidua; *c c*, the Fallopian tubes cut short, by one of which the ovum has just descended while still of same size.

C. Enlarged view of the exterior of the human ovum twelve or fourteen days after conception, showing the villi of the chorion projecting from its surface.

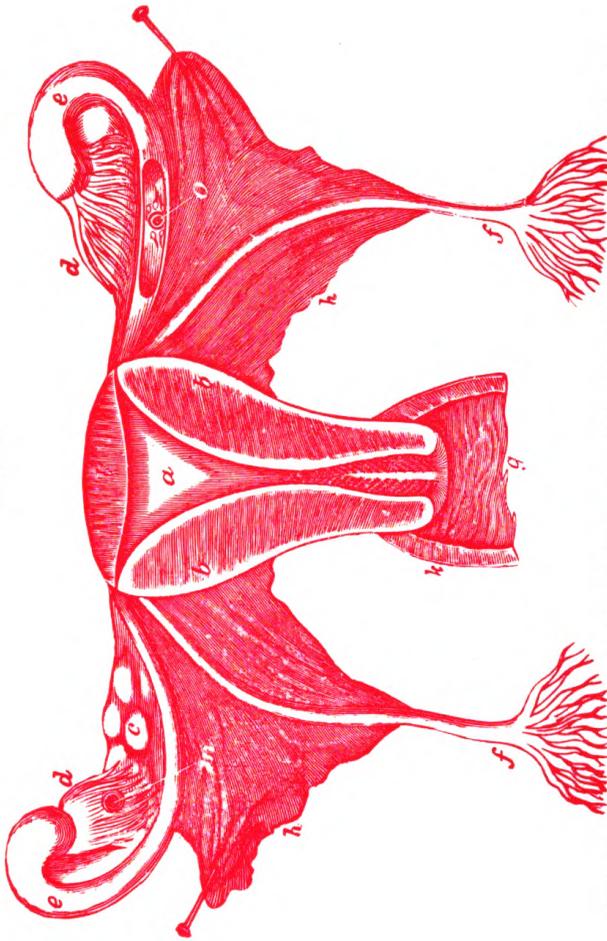
FIG. 3.



SECTION OF FEMALE PELVIS AND ITS CONTAINED VISCERA.

A, uterus; B, bladder; C, rectum; D, anterior, and E, posterior lip of cervix uteri; F, connective tissue uniting the anterior wall of uterus to the bladder; G, loose tissue between the posterior wall of uterus and rectum; H, vagina.

FIG. 5.



FRONT VIEW OF THE UNIMPREGNATED UTERUS AND ITS APPENDAGES AND SECTION OF VAGINA.

a, cavity of uterus; *b*, body of uterus, *d d*, fimbriated extremity of Fallopian tube; *e*, Fallopian tube; *f*, round ligaments; *h*, broad ligaments; *k*, walls of vagina; *l*, fundus of uterus, *g*, vagina, *m*, fimbriated portion of tube grasping an ovum; *o*, ovum surrounded by spermatozoa in lower third of Fallopian tube during its passage toward the uterus. It is in this part of the tube where impregnation usually takes place.

FIG. 6.



LEFT FALLOPIAN TUBE FROM AN ADULT.

a, fimbriae; *b*, body of the tube; *c*, abdominal orifice, *d*, tubo-ovarian ligament and fringes, *e*, commencement of the tube; *f*, *f*, tubal mesentery or broad ligament; *g*, ovary; *h*, ligament of the ovary; *i*, uterus; *j*, round ligaments.

FIG. 7.



OVARY ENLARGED FOUR TIMES THE NATURAL SIZE, AND DISSECTED TO SHOW.

A, peritoneum; B, tunica albuginea; C, stroma; D D D D, Graafian follicles in various stages of growth; E E, outer coat of the follicle; F F, inner coat of the follicle; G G G, epithelial lining or membrana granulosa; H H, ovum and cumulus; I, orifice by which the follicle has discharged an ovum; K, Fallopian tube; L, fimbriae; M, broad ligament; N, tubo-ovarian ligament; O, ligamentum ovari.

FIG. 44.



UTERUS IN THE FIRST MONTH OF GESTATION; SHOWING THE FORMATION OF THE FETAL CHAMBER BY THE MEMBRANÆ DECIDUA.

u, uterine walls traversed by numerous blood-vessels; *d v.* decidua vera, or developed lining membrane of the uterus, the uterine glands or canals being much enlarged; *d r.* decidua reflexa, in which lies the ovum *o*, which is still at this stage unattached; *e.* corpus luteum.

THE LADIES' NEW MEDICAL GUIDE

CHAPTER I.

THE FEMALE SEXUAL ORGANS.

ANATOMY OR STRUCTURE OF THE FEMALE ORGANS OF GENERATION.

THE generative or reproductive organs of the human female are usually divided into the internal and external. Those regarded as internal are concealed from view and protected within the body. Those that can be readily perceived are termed external. The entrance of the vagina may be regarded as the line of demarcation of the two divisions.

EXTERNAL ORGANS OF GENERATION.

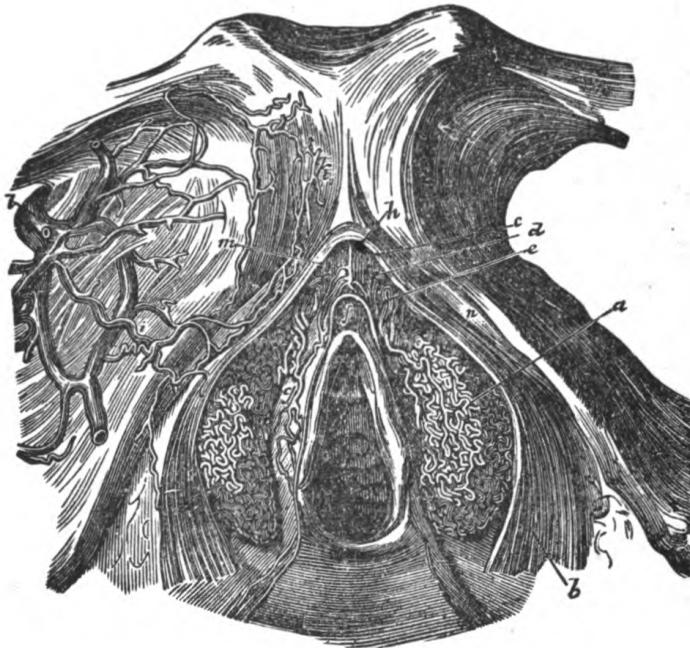
The external organs of generation consist of the *Mons Veneris*, *External* and *Internal Labia*, *Clitoris*, *Meatus Urinarius* and *Hymen*.

1. **MONS VENERIS.**—This is the prominence situated over the symphysis pubis, consisting of the integuments or skin, (fatty or adipose tissue), and sebaceous follicles, and covered with hair at puberty.

2. **EXTERNAL LABIA.**—The labia majora (large lips) are sometimes called the external lips of the vagina, and close the orifice of that passage, or canal. They are two thick membranous folds, constituting the sides of the external pudendum, and extending from the mons veneris above to the

with nerves and vessels. It becomes erect during coition, and is the principal seat of the thrill or voluptuous sensation in the female. In nymphomania, the clitoris is sometimes cut

FIG. I.



ANTERIOR VIEW OF THE EXTERNAL ORGANS 1—(After Kobelt)

a, vestibular bulb; *b*, constrictor vaginae muscle, according to Kobelt the compressor of the bulb. It is here represented as drawn back behind the bulb, which in the natural position is covered by it; *c*, anterior division of the muscle which passes over the body of the clitoris, serving to depress the organ, and to compress the dorsal vein; *d*, posterior tendinous division of the same muscle; *e*, intermedia; *f*, glans clitoridis; *g*, veins proceeding from the nymphæ; *h*, dorsal vein of the clitoris; *i*, branches communicating with the obturator veins; *k*, branches ascending to the epigastric veins; *l*, obturator veins; *m*, corpus clitoridis; *n*, glans clitoridis of the left side.

by the knife and the parts cauterized, before this species of insanity can be permanently cured. The clitoris of the women living in a warm climate is usually larger than with

CHAPTER II.

INTERNAL ORGANS OF GENERATION.

The internal reproductive organs of the female consist of the *Vagina*, *Uterus*, *Fallopian Tubes*, or *Ovaducts*, and *Ovari*.

I. VAGINA.—This lies between the rectum and the bladder, and extends from the external labia to the neck of the uterus. It is about one inch in diameter in virgins, but much larger in those who have borne children. Its length is from five to six inches. The uterine end surrounds the neck of the womb and assists in supporting the same.

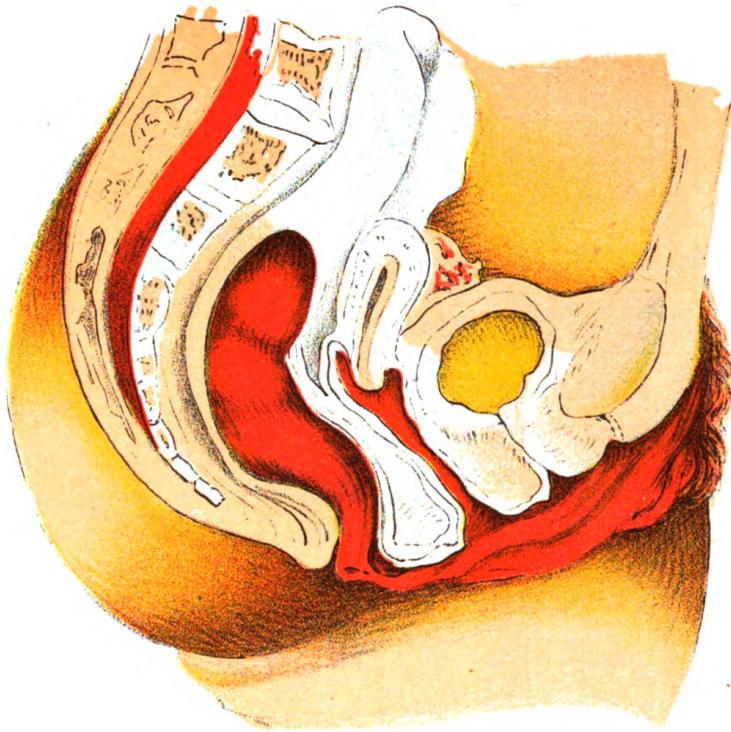
The Vagina consists of three coats or distinct membranes—the external being fibrous, the middle muscular, and the internal mucous. The latter secretes a mucus, which, when the female is in good health, is merely sufficient to keep the vagina in a moist condition. When it does more than this, the secretion is discharged externally, and called Leucorrhœa or Whites. In coition this secretion is increased. The vagina in some females contracts powerfully when stimulated by the male intromittent organ, which increases sexual pleasures during the act of copulation. The office of this organ is to receive the seminal fluid and facilitate its passage into the uterus. During menstruation it also voids the catamenial flow, and it likewise transmits the foetus and placenta during labor.

Abnormal conditions of the vagina occasionally exist. In some instances it has been found wanting, there being no trace of any canal leading to the uterus observed. Sometimes this channel is so narrow as scarcely to admit a goose quill through its length, but such cases, however, are very rare.

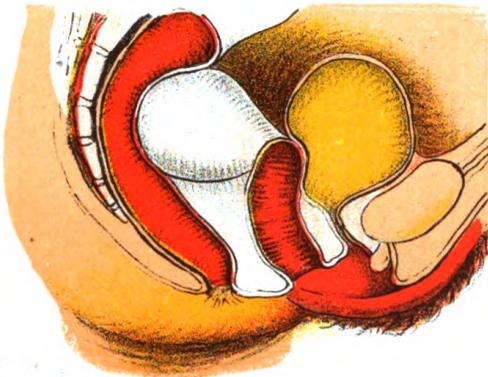
A vertical septum occasionally divides the vagina through

cervix or neck into view by means of the speculum. The position of the neck prevents the part from injury in coition. At the apex of the neck is observed a transverse fissure which is the terminal end of the cervical canal. This opening is called the *os-externum uteri*, or the external orifice of the cervical canal. (*Fig. 4, e.*) This external orifice of the womb is bordered by two smooth lips, which are distinguished as the anterior and posterior lips of the *os-uteri*. The anterior lip is the smallest, and projects but slightly into the vagina. This unequal form of the two lips has given rise to the term *os-tincæ*—the orifice of the uterus. In the virgin this part of the uterus is smooth and firm, like soft cartilage. After the birth of many children, it becomes much enlarged, soft, flaccid and of irregular form. The uterus being a hollow organ, possesses both an internal and external surface. The external surface is partially covered by a reflection of the peritoneum, which is a dense, smooth fibrous tissue that lines the whole abdominal cavity. It is by the reflection of this membrane that the broad ligaments are formed which we shall presently describe. The internal cavity of the uterus in the unimpregnated state is nothing more than a narrow triangular interspace between flattened walls, which are either in immediate contact or are separated slightly from each other, and the space filled with mucus. The Fallopian tubes after passing into the uterus expand trumpet-like, and meet the cervical canal opening upward, and the three openings expanding in this way, thus form the triangular cavity of the uterus.

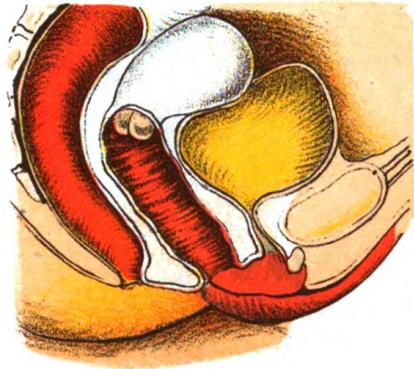
By studying the form of the cavity of this organ, all the phenomena of the entrance of the ovum into the uterus and its detention there before it becomes detached to the uterine walls, may be perfectly understood. This cavity is lined by a mucous membrane of a pale pink color, except in cases where death has occurred during menstruation, when it is of a deep red hue. This membrane is not smooth, as it appears to be when viewed with the naked eye, but is perforated



ORGANS OF A WOMAN



**FALLING OF THE WOMB
BACKWARDS AGAINST THE RECTUM**



**FALLING OF THE WOMB
FORWARD AGAINST THE BLADDER**

These conclusions are derived from observation upon mammalian animals as well as the human female, the functions in either case being essentially the same. It is accordingly quite clearly demonstrated that the office of the fimbriated extremities of the Fallopian tubes is to become expanded over a certain portion of the ovaries—the extent of the surface depending upon the relative size of the ovaries.

In some mammalia, as the cat, for instance, the extremity of the tube is sufficiently large to encompass the entire ovary, so that an ovum escaping from any part of its surface, will be conveyed or fall into the orifice, and be drawn into the canal. In many other animals, however, as well as in the human female, the size of the tubes is only large enough to cover one-third or one-half of the ovary at one time, so that, in all cases, a selection must be made of the exact spot where the ovum is discharged, or else the ovum will be lost by falling into the cavity of the abdomen.

Sterility in the female is sometimes caused by a morbid adhesion of the tube to a portion of the ovary. By what power the mouth of the tube is directed toward a particular portion of an ovary from which the ovum is about to be discharged, remains entirely unknown, as does also the precise nature of the cause which affects this movement.

The tubo-ovarian ligament (*Fig. 6, d.*) serves at all times to keep the extremity of the tube in contiguity with the ovary, but by what agency the orifice of the tube is drawn toward and the fimbriæ become expanded upon the ovary cannot be satisfactorily explained. The only way to account for the movement is the contraction of the low constrictile form of fibre of which this ligament is composed, which is found in some of the lower-order animals. It was formerly supposed that the approximation of the mouth of the tube and the ovary occurred under the influence of sexual orgasm—an inference natural enough so long as it was believed that the ova were discharged from the ovary during and as a consequence of sexual congress. This cannot, with our pres-

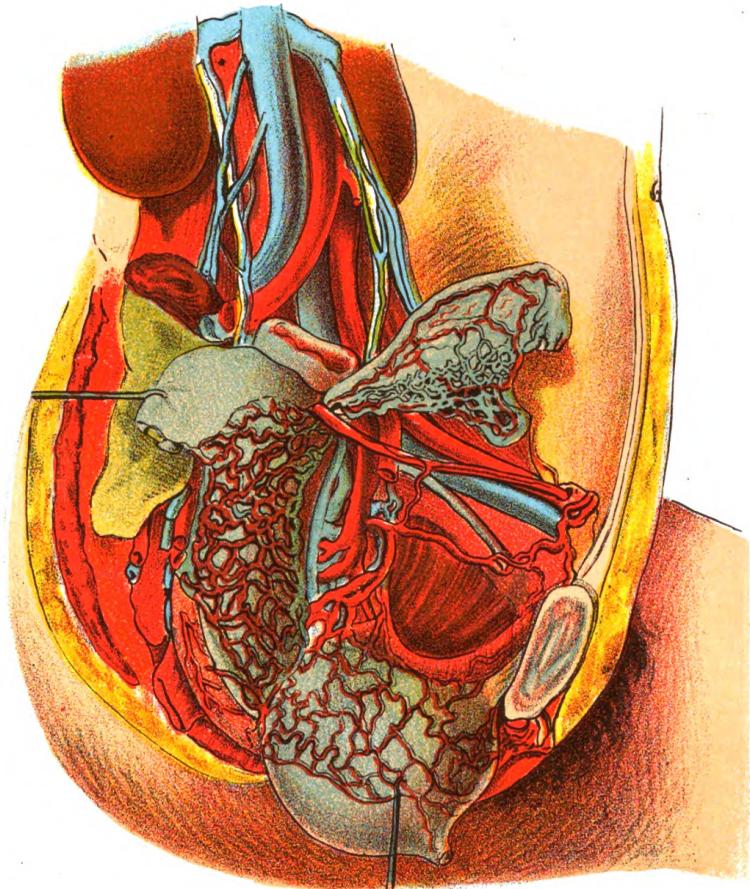
ent knowledge of physiology, be admitted; for it is now a well-settled fact, that in all mammalia, including the human female, the discharge of the ova or eggs takes place during the menstrual discharge and not during sexual congress. The approximation of the Fallopian tube to the ovary at such times is to be regarded as a movement providing for a safe passage of the ova to the uterus, and not that the venereal orgasm is the cause of the movement.

The period of time occupied for the passage of the ovum through the tube is usually a few days. In the bitch, the ovum remains in the tube susceptible to impregnation during six or eight days. In the guinea-pig and rabbit, the ovum makes its transit in about three days. Less is known respecting the time of such passage in the human female. With the exception of abnormal cases, there are but two instances recorded in which the human ovum has been actually seen on its passage to the uterus.

An attempt has been made to ascertain the time an ovum is passing in the human female, by comparing the condition of early ova found in the uterus or prematurely expelled from this organ, with the last known date of intercourse or of menstruation, but neither of these modes of calculation can afford any certain information. The analogies furnished by observation with the higher order of animals lead to the supposition that the time occupied for the passage of the ovum through the tube in the human female is not materially different from that of animals, which is from six to twelve days.

The office of the tubes, as before intimated, is twofold, namely, the passage of the ovum from the ovaries to the uterus, and for the conveyance of the spermatozoa toward the ovaries. The rapidity with which the spermatic fluid is capable of reaching and entering the Fallopian tubes in some animals is very remarkable. *Bischoff* observed spermatozoa in the oviduct of a guinea-pig in three quarters of an hour after coitus. The power by which the semen reaches





ARTERIES AND VEINS OF
VAGINA AND UTERIS (SAVAGE)

CHAPTER III.

STRUCTURE OF UNIMPREGNATED OVUM.

ITS ORIGIN AND FORMATION IN HUMAN FEMALES.

THE ovum may be described as a spheroid mass of organized substance, enclosed in a vascular membrane, and when fecundated by the sperm of the male undergoes various changes or development, until it is unfolded into an embryo. All animals with the exception of some of the lower, as the Infusoria, propagate their species and maintain them by means of the ova and sexual generation. It seems to be a law of Nature that species can only be propagated in this way. The result of fecundation is the formation of an embryo from the ovum, which by progressive growth arrives at maturity and assumes the form, structure and habits, as well as weaknesses and imperfections of its parents.

The ovum has two phases or stages of existence. The one is in connection with the female organ, which provides material for its development until it arrives at the stage of maturity, when it is expelled from its bed or Graafian vesicle. The other is the influence exerted over it when it comes in contact with the fructifying principle of the male, in which a new power is awakened and developed. The ovum, therefore, cannot be considered as having arrived at maturity (though such is the case, so far as its own structure is concerned) until it is united to the spermatozoa of the male; for without it, its progress is arrested so far as regards its ultimate development.

On examining a fully developed ovum, after it has been expelled from the Graafian follicle, its structure will be found arranged as follows (*Fig. 18*):

weighs two ounces, or nine hundred grains, and is nearly 1-22 part of the adult body, supposing it to be under three pounds; while the weight of the human ovum is about 1-1,000,000,000 part of that of the human female.

NUMBER OF OVA.—The number of ova developed in the female sex during the whole of her life, vary very much, and probably cannot be definitely ascertained.

The ovary of a herring has been found to contain twenty-five million eggs. In the ovaries of a halibut weighing one hundred and fifty pounds, three million have been counted. The African ant is said to lay eighty thousand eggs in twenty-four hours, and the common hair worm eight million in less than a day. In birds and those animals that have large eggs only a few of them arrive at maturity. In the common fowl that lays daily two-thirds of a year, a product amounting to thirty pounds, or ten times the weight of the animal, is the result, while the number of eggs produced in the course of the bird's natural existence will not be less than twelve hundred. The number of ovula in the common hen will amount to thirty or forty thousand; hence, as twelve hundred eggs are only produced on an average from each, it will be seen that a large number of ovula never arrive at maturity.

In the human female but few ova ripen or come to maturity at a time. Thus several ova may be discharged at every menstrual period for about thirty years of life. The number thus discharged can scarcely be less than four hundred (probably many more), each one of which if fully developed, by being brought in contact with the fructifying seed of the male, would be capable of bringing forth a living being. It has been stated that the human ovum is about 1-200 of an inch in diameter, or of the size of a pin's point; but small as it is, each one is capable of unfolding a human being.

It is interesting to trace the ovum and observe the changes which take place as it passes through the Fallopian tubes. Its development in the ovary and expulsion therefrom has

CHAPTER V. DEVELOPMENT.

DEVELOPMENT OF OVA IN BIRDS AND OTHER OVIPAROUS ANIMALS.

THE difference in the amount of formative material in the ovum of the bird is owing to the manner in which the embryo is supplied with its sustenance. Here the whole amount of nourishment required, is provided in the egg before it is detached from the parent. In the human female and animals that bring forth their young alive, the material for growth is derived from the maternal parent, whether afforded by the placenta or some analogous structure.

The egg of the ordinary domestic fowl may be regarded as the type of oviparous animals. A knowledge of its development will enable any one to comprehend the difference which exists between the eggs of the human female and viviparous animals, or those that develop with the egg the necessary material for growth independent of the parent. In such cases, normal temperament and a supply of oxygen are all that is necessary for development of the young, provided the egg has been fecundated before being thrown off by the female. A varnished egg will not hatch, nor can this take place if one-half of the shell be thus treated.

The average size of a fowl's egg is two and a quarter inches in diameter long and one and three-quarters in the short diameter, the average weight being two ounces. Double-yelked eggs usually weigh about three ounces. The weight of the yelk is about one-third of the whole, while that of the albumen and shell are equal to the other two-thirds. If eggs are kept exposed they become lighter, losing about one grain per day, which is owing to evaporation through the shell, it being of a porous nature. During incubation or

CHAPTER VI.
MALE ORGANS OF GENERATION.

THE HUMAN TESTES.

THE testicles are two glandular bodies that are suspended by the spermatic cord and scrotum. The size of the glands depends upon the age and sexual indulgence of the individual.

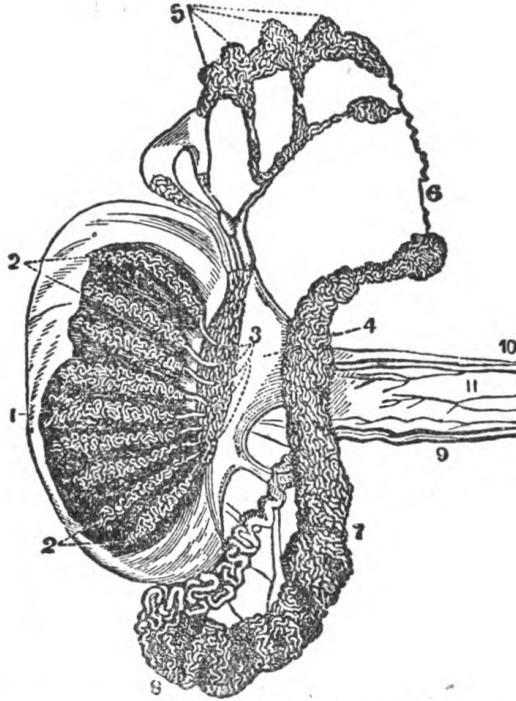
The scrotum consists of a simple integument, covered with hair. Within this there are four tunics or membranes, which, by comparison, may be compared to the peelings of an onion. The internal structure consists of tubes that are so convoluted or twisted upon themselves as to constitute lobes. As a description of these membranes would not be interesting to the general reader, it will only be requisite to present some idea of the glandular structure, or of that part which secretes the spermatic fluid.

As before remarked, the secreting structure of the testicles consists of tubes which form lobes. (*Fig. 30, 1, 1, and Fig. 31, 2, 2.*) If these lobes be examined carefully they will be found to consist of minute tubes, called *Tubuli Seminiferi*. Each tube is about seventeen feet long and 1-170 of an inch in diameter. The tubuli of each lobe coalesce into twenty or thirty straight tubes, called *vasa recta* (*Fig. 31, 3.*) The *vasa recta* are twice the diameter of the seminiferous tubes, and penetrate a fold of the tunica albuginea (the immediate investment of the testicle), which forms what is called the *corpus highmorianum*. In this corpus or body, an anastomosis of the tubes takes place, which is called the *rete testis* (*Fig. 30, 2.*) The *rete testis* gives off from twelve to twenty ducts or tubes, which again penetrate the corpus highmorianum in passing out, and form the *vasa efferentia*, (*Fig. 31, 5.*) Here the tubing again form into cones or lobes,

deferens is much larger than the other parts of the tube, and is about the eighth of an inch in diameter.

The structure of the testicles will compare with that of the

FIG. 31.



THE STRUCTURE OF THE TESTICLE INJECTED WITH MERCURY, AND ITS SEVERAL PARTS UNRAVELLED. (After Sir A. Cooper.)

1, 2, 3, Tubuli seminiferi; 3, vasa recta, forming the rete testis; 4, corpus highmorianum; 5, vasa efferentia, forming the coni vasculosi; 6, a single tube formed by the junction of the vasa efferentia. This tube then becomes convoluted upon itself to form the epididymis; 7, 8, beginning of the vas deferens; 9, the vas deferens becoming a straight, isolated tube in its ascent to the abdominal ring; 10, spermatic artery; 11, spermatic cord spread out.

ovary and Fallopian tubes, as respects their peculiar beauty and arrangements. It has been estimated that there are eight hundred and forty tubuli in the two testicles, twisted in such a manner as to make each tube seventeen feet in length as before stated. This will give 14,280 feet of tubing. This is lined by a delicate membrane, which secretes or forms

CHAPTER VII.

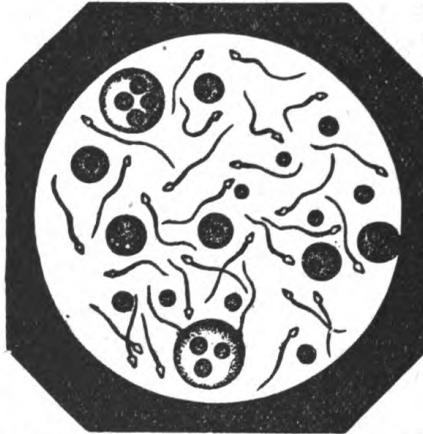
FUNCTIONS OF THE HUMAN TESTICLES.

THE office or function of the testicles is to secrete the male sperm, a substance that appears to the naked eye like ordinary mucus devoid of life. If the microscope, however, be applied to a small quantity of this secretion, taken from a healthy male who has arrived at puberty, it will be found alive with minute, thread-like, bodies. So numerous are these that, at first sight, the semi-liquid mass seems to be almost entirely made up of them. They are called the *seminal animalcules*, or *spermatozoa*. There are also found in this *liquor seminis*, minute round corpuscles called *seminal cells*.

ORIGIN OF SPERMATOZOA.

SPERMATOZOA in man, as well as in animals, and some of the higher order of plants, have their origin in cells, which are dominated seminal cells or *spermatophori*. These cells

FIG. 32.



MICROSCOPIC APPEARANCE OF HEALTHY HUMAN SEMEN MAGNIFIED FIVE HUNDRED DIAMETERS.

are filled with granular matter, (*Fig. 32*) each granule capable of being developed into a *spermatozoon*. These germ cells are developed in the tube composing the testicles. It is within the tubes these cells burst, when the thread-like bodies escape, and take on those peculiar motions which have given

FIG. 33.



Spermatozoon from the Human Testicle.

rise to the opinion that they are *distinct animalcules*. Some physiologists do not regard them as possessing distinct animal characteristics any more than is attached to the *cilia* that line the cells of the neck of the uterus and Fallopian tubes. Hence they have been called cell-germs, furnished with peculiar moving power. On the other hand, *Pouchet* asserts that these *zoospermata* have a *digestive* apparatus, which is called by him *cephalo-thorax*, as represented (*Fig. 33*; also *Fig. 34,g.*) The (*Fig. 34*) gives the spermatozoa of different animals, and the motion will correspond with the development. Those with tail-like appendages resemble the motion of an eel in water. Those with the spiral development have the spiral motion. From observation it has been ascertained that spermatozoa will retain their moving powers twenty-four or thirty hours after they enter the uterus and Fallopian tubes.

In the young and vigorous, the spermatozoa are abundant and active. In debilitated persons, those that have weak constitutions and where the vital forces are depressed, the spermatozoa will not only be found very scanty but exceedingly feeble. Such scantiness and feebleness will correspond with the vital energy or debility of the individual in whom they are developed.

CHAPTER VIII.

HERMAPHRÖDISM.

THERE are two distinct varieties of Hermaphroditic malformation—the *spurious* and the *true*.

The spurious comprehends such as have the generative organs approximating the natural organs in appearance and form. The true hermaphrodism includes an actual mixture or blending of the male and female organs upon the same individual.

I. SPURIOUS HERMAPHRÖDISM.

In the Female. Errors have occurred in regard to the true sex of an individual, from enlargement of the clitoris and prolapsus of the uterus—the former being taken for the penis and the latter for the testicles.

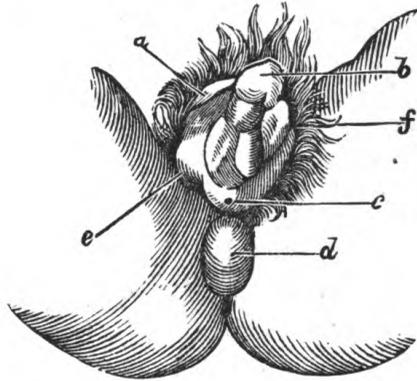
In some females at birth the clitoris is not much behind that of the male penis in size at the same period of life. After this period it ceases to grow as rapidly as the other external genital organs, and at puberty it is from half to an inch in length, as a general rule. In other cases, the clitoris continues developing up to adult life, and resembles the penis of the male.

Large-sized clitores are less common among the inhabitants of temperate and cold climates than in the tropics. The frequency of them in Arabia and Egypt led the ancient surgeons of those countries to amputate the organ. *Ætius* and *Paulus Eginetus* speak of this amputation having been practiced among the Egyptians. According to *Jonni*, circumcision is still performed upon females of that country.

This variety of conformation of the female parts was well-known to the ancient Greeks, as a number of their writers

tumor (*d*) gradually increased, becoming in the course of two or three days of a size of a hen's egg. When the tumor reached this size, the discharge of blood commenced from the

Fig. 40.



EXTERNAL APPEARANCE OF THE ORGANS OF GENERATION OF A FEMALE.

a, clitoris; *b*, glands of clitoris; *c*, orifice for passage of urine; *d*, tumor in perinæum; *e*, small tumor in right groin; *f*, small tumor in left groin.

anus. As alarming symptoms had always occurred at these periods, Arnaud was induced to puncture the tumor, in which he found a cavity two inches in circumference and about two and a half in breadth, having a projection at one point which he supposed to be the *os uteri*. At the next menstrual period, the discharge came from the opening in this tumor, and was not attended with any of the alarming symptoms that had previously occurred. This opening, after a time, through neglect, was allowed to close, when the discharge flowed from the anus, as usual, with all the former alarming symptoms. This female's skin was thick and rough; she had a soft black beard; her chest was narrow; her breast small, like the male; her hands large and her fingers long. Her voice was coarse, the upper part of her body was masculine, while the lower part partook of the female characteristics—large pelvis, buttocks, legs, etc., with small feet. The regular menstruation of this person left no doubt

CHAPTER IX.

MENSTRUATION.

THE uterus is the efficient instrument in Menstruation, but the organs that cause and regulate it, are the ovaries. These exert a powerful influence not only upon the uterus, but over the entire organism. If the ovaries be removed in a female menstruating regularly, such catamenial flow will immediately cease, whereas it has never been known to occur in females who had no ovaries.

Menstruation consists of a sanguineous discharge, which escapes from the sexual orifice of the vagina in a female who enjoys health, periodically, except during lactation and pregnancy.

The discharge commences at puberty, and is an evidence that the female has arrived at that period of life. In the tropics puberty occurs from the tenth to fifteenth year; in temperate climates from twelve to sixteen years. Menstruation occurs in a healthy female every twenty-eight days, or every lunar month, and continues on an average for thirty years.

Mr. Robertson has given this subject his attention for many years, and prepared a table of four hundred and fifty women, which shows the period of their first menstruation respectively, as follows:—

In the 11th year.....	10	women
“ 12th “	19	“
“ 13th “	53	“
“ 14th “	85	“
“ 15th “	97	“
“ 16th “	78	“
“ 17th “	57	“
“ 18th “	26	“
“ 19th “	23	“
“ 20th “	4	“

CHAPTER X.

GENERATION.

THIS is considered the most interesting and important part of a work of this character, particularly of late years, when so many different theories have been advanced and strongly maintained by some of the brightest lights that adorn the medical profession. The reader may, perhaps, readily anticipate the views of the author of this volume from what has been already advanced in the preceding pages. The work, however, would be imperfect without a fair presentation and comparison of the facts and opinions of former writers with the latest observations made upon this subject. Hence they will be succinctly stated and analyzed according to their relative importance.

The process of generation is that by which the young of living organized bodies are produced and the species continued. Some animals propagate by a division of their bodies into pieces, each one becoming endowed with an independent existence similar to the parent. Others propagate by buds upon the parent stem, which buds, when they arrive at maturity, separate and retain an individual existence. Another class of animals throw off from their bodies a portion of organized matter, which, after undergoing various processes of development, acquire all the peculiarities of the parent. In the fourth and last class the process is more complex than in either of the others. In this last division, the union of the male and female sexes is necessary for procreation. The reproductive functions require more complicated processes in the higher than in the lower order of animals, in order to the perpetuation of the different species through an undeviating succession of generations.

year. There are many instances where the virile powers of the male have been retained even to a much more lengthened period—to the eightieth, ninetieth, or hundredth year. In the celebrated case of “Old *Parr*,” it continued unimpaired until he reached one hundred and thirty years of age. *Masinissa*, king of Numidia after he was eighty-six years old, begot *Methynate*. *Wadals*, king of Poland, had two children after his ninetieth year. The Hon. *Jeremiah Smith* of New Hampshire became the father of a child when he was eighty. The author is acquainted with a gentleman who married the first time when he was seventy-five and had two sons by a young wife. There are some cases on record of females menstruating the second time and bearing children at seventy or eighty years of age. I am cognizant of the case of a lady of Philadelphia who commenced menstruating at nearly eighty years of age, and conceived.

SEXUAL FEELING.

In all animals where the distinction of sex exists, there are instinctive feelings experienced to a greater or less extent. This feeling depends upon the temperament of the body and the condition of the mind. In animals the impulse is concomitant more upon a peculiar state of the genital organs, which is manifested at a particular season of the year, known as the “breeding” or “rutting” period. In the female, at this time, a peculiar secretion takes place in the genital organs, the odor of which excites the sexual functions of the male.

In the human species a similar function exists, but which is capable of being placed under intellectual and moral control. When not so governed, this passion is productive of the most revolting obscenity and prostitution. Hence the necessity of legislative enactments to restrain licentiousness and concubinage.

Fig.1

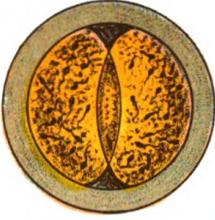


Fig.2



Fig.3



Fig.4



Fig.5

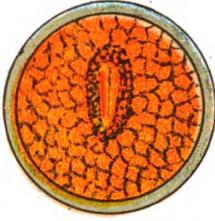


Fig.6

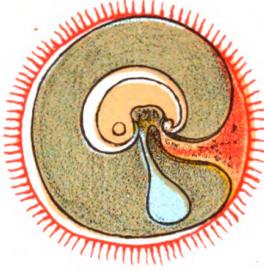


Fig.7

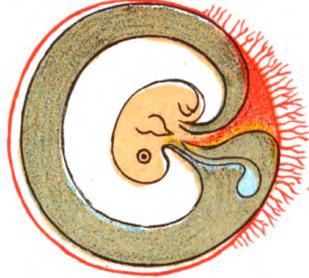


Fig.8



Fig.9

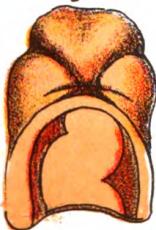


Fig.10



Fig.11



GROWTH OF THE EMBRYO

In the summary of established facts, then, a recapitulation of the most plausible and rational theory now entertained, may be presented as follows:

It is during the menstrual period that the ova are ripened. They are then received into the Fallopian tubes, and occupy from six to fourteen days in their passage to the uterus. If impregnation occur, it must be from the union of the spermatozoon with the ovum, before the latter has passed out of the tube. Should there be no impregnation, the ovum passes into the uterus and is lost. If five days be allowed for menstruation and fourteen days more for the passage of the ova (though twelve are accounted sufficient) there is accordingly a period of nine days during which impregnation cannot take place except in rare cases, say once in one hundred times, or, indeed, in five hundred times.

PREVENTION OF CONCEPTION.

The question is often asked, "*Can Conception be prevented at all times?*" Certainly, this is possible; but such an interference with Nature's laws is inadmissible, and perhaps never to be justified in any case whatever.

During the past few years hundreds of works have been written, and many circulars distributed, to the females of the land, holding forth the idea that *new* remedies had been discovered for the prevention of conception. It is needless to state that such assertions are impudent and wicked fabrications, and that the volumes and pamphlets are mere catch-penny devices, intended to deceive the public and enrich the pockets of miserable and unprincipled charlatans and impostors.

The *truth* is, there is no medicine *taken internally* capable of preventing conception, and the person who asserts to the contrary, not only speaks falsely, but is both a knave and a fool. It is true enough that remedies may be taken to produce *abortion* after conception occurs; but those who pre-

CHAPTER XI.

NATURE'S INSTITUTES FOR THE PROCREATION AND PERPETUATION OF THE HUMAN SPECIES.

Moral Love and Sexual Passion—Courtship—Marriage—
Effects of Continnence—Celibacy Contrary to Nature—
Philo-Progenitiveness, or Parental Love and Care of Off-
spring—When and Whom to Marry—Summary of the
Economy of Human Life.

MORAL LOVE AND SEXUAL PASSION.

MANY persons talk without either knowing what they say, or whereof they affirm. Nothing is more commonly spoken of, or so little considered as the subjects that head this chapter. Let us not waste words in showing how often these important matters are misunderstood and misapplied by the light and the trifling, the gay and the thoughtless, or the vicious and the ensnaring; but trace them at once through all their mazes to a satisfactory solution of their purport.

What then is *Love*? Delightful emotion that binds the mother to her offspring—dear daughter of desire and parent of tender sensibility, heaver of the throbbing heart, and sweet exciter of the maiden's blush, how—how shall we describe thee? Indescribable art thou, a beautiful and pure, as well as an all-conquering passion! No poet can adequately define thee, nor painter portay thee, lovely and all refining, spotless and heavenly as thou art! Yet, all-pervading as thou art, who has not felt the delicious witchery of thy power!

It is *moral* love, then, which is the foundation of all that is beautiful in the tender passion, and of all the interest which erotic writers have thrown around this peculiar sentiment or feeling. Pure affection is not based on mere sexual instinct, but a holier and diviner impulse, although sexual conjunction is not irrelevant to its blissful fruition.

In regard to the mere animal propensity, there may be sensual love without *affection*. At the period of puberty, especially, in both sexes the sexual instinct—as if by a spontaneous internal voice of Nature—at first excites, and then renders man, now in the flower of his life, more prone to the venereal embrace. At this peculiar erotic period, the agitation and disorder of the senses give birth to a new sense, in which man alone seems to receive his existence—in which every thing becomes animated and embellished, and in which all around him appear to burn with the same flame by which he is so deliciously consumed.

COURTSHIP.

Courtship, in which the gentleman does the agreeable, is a very pleasant thing. It is so delightful in itself that many persons never go further. It consists in much billing and cooing, in serenading, and in walks by the lonely lake, or unfrequented path, in the moonlight stroll upon the lawn, or the winsome conversation in the recess of the window, in interchange of love and eternal fidelity, etc. Love makes all harmonize. The coy maiden, it is true, will be very shy, for a while, and “faint heart never gained fair lady.”

A certain brisk confidence must be assumed, for a lady delights in an ardent lover, and many such have triumphed when all others have failed.

For this cause, perhaps, successful villains, who have much practice in the wiles that gain woman's heart, are more likely to gain their ends than he who truly loves, but is by bashfulness deterred; while in many cases, woman has loved “not

joy and gladness, peace and "bliss—exquisite bliss." in the possession of each other. Experience, however, has proved to too many, that happiness is not a plant of earthly growth, and many who might have averted it, with prudent foresight, have had to lament an ill-assorted marriage ere the "honey-moon" had waned. Otherwise, and upon the whole, perhaps Courtship is a state of much felicity, and one which the wedded pair will look back upon with delight, if in it they have had mutual respect and esteem, and still maintain the integrity of such true sentiments and fidelity. Thus the enjoyment of reciprocal love is full of bliss on the threshold of matrimony which is yet an unexplored region.

This constitutes Courtship. Hence, the first step must be made by the male, for that the initiative should be taken by the fair lady, is, if not indelicate, at least unusual, or unnatural, except in Leap Year. The male must woo, while the lady must be wooed in order to be won. Madame de Staël, speaking of Courtship, says:—

"How enchanting is the first gleam of intelligence with her we love! Before memory comes in to share with hope, before words have expressed the sentiments, before eloquence has been able to paint what we feel, there is in these first moments a certain kind of tumult and mystery in the imagination, more transitory than happiness, but still more heavenly."

Aristotle well says, "No man loves but he that was first delighted with comeliness and beauty, the graces of mind and the impulses of a pure and generous heart."

MARRIAGE.

The parties are wedded. The priest has pronounced as one, those hearts that before beat in unison with each other. The assembled guests congratulate the happy pair, the fair bride has left her dear mother bedewed with tears and sob-

requires that we *know* them. Hence the necessity of the marriage relation, and that men and women should be *faithful* in wedlock. Marriage is thus a divine and natural institution—opposed to celibacy, concubinage, harlotry, adultery, and promiscuous sexual intercourse. The fact is, nature has her own laws, and they must not be violated. *Love* thus implies both mating and fidelity, and interdicts free-love and amatory promiscuity in any form. Sexual conjunction, accordingly is only proper after reciprocal love has eventuated in marriage. But marriage itself is not desirable unless it eventuate in its natural product—*children*—which *both* parents can *together* bring up—*all* as *their own* mutual children, begotten in wedlock. This is *true* love. Hence the *Family state*, or the connubial connection, is the sublimest of Nature's Institutes for the well-being and happiness of man.

WHEN AND WHOM TO MARRY.

The desire for *sexual union* is rarely indicated until the male and female have arrived at *Puberty*. This is a period of life, when childhood is passing from a stage of immaturity of the sexual organs to a full development of their functions. In other words, Puberty is that combination of circumstances in which the passion of love originates. Sex, climate, and manner of living, however, have a great influence on the earlier or later appearance of the phenomena of puberty. Woman attains to this state a year or two sooner than man, and the inhabitants of southern, before those of northern countries. In the hotter climes of Africa, Asia and America, girls are marriageable as early as ten years of age; in the temperate zones, the period of puberty is from twelve to fifteen; while in the colder regions of Russia, Sweden, Denmark, England, the northern parts of the United States and Canada, menstruation, the most

heaven, and the influence of her power it is in vain to resist.

“The whiteness of her bosom transcendeth the lily; her smiles are more delicious than a garden of roses.

“The innocence of her eye is like that of the turtle-dove; simplicity and truth dwell in her heart.

“The kisses of her mouth are sweeter than honey; the perfumes of Arabia breathe from her lips.

“Shut not thy bosom to the tenderness of love; the purity of its flame shall ennoble thy heart, and soften it to receive the fairest impressions.”

WOMAN—WIFE—MOTHER.

“Give ear, fair daughter of love! to the instructions of prudence, and let the precepts of truth sink deep in thy heart: So shall the charm of thy mind add elegance to thy form; and thy beauty, like the rose it resembleth, shall retain its sweetness when its bloom is withered.

“In the spring of thy youth, in the morning of thy days, when the eyes of men gaze on thee with delight, and nature whispereth to thine ear the meaning of their looks: Ah! hear with caution their seducing words, guard well thy heart, nor listen to their soft persuasions.

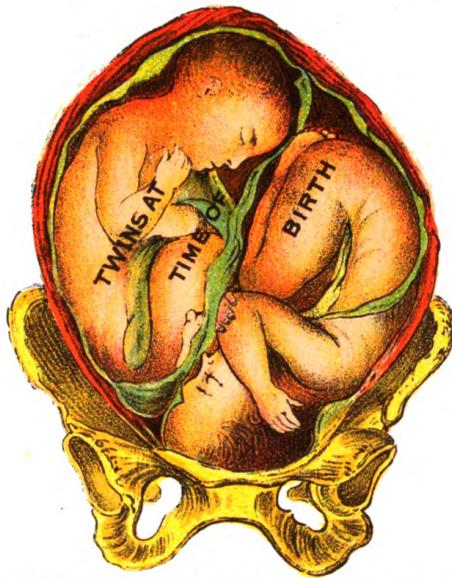
“Remember thou art made man’s reasonable companion, not the slave of his passion; the end of thy being is not merely to gratify his loose desire, but to assist him in the toils of life, to soothe him with thy tenderness, and recompense his care with soft endearments.

“Who is she that winneth the heart of a man, that subdueth him to love, and reigneth in his breast?

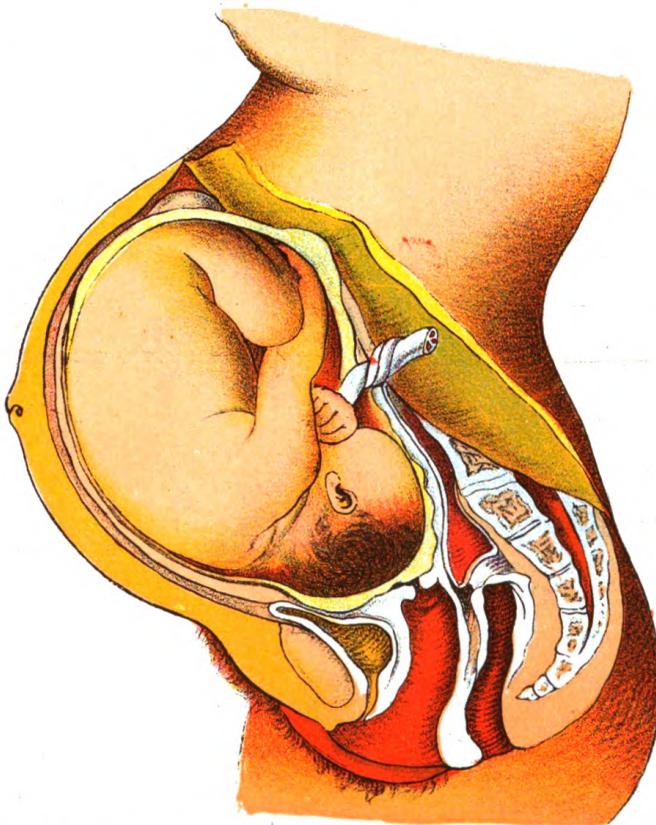
“Lo! yonder she walketh in maiden sweetness with innocence in her mind, and modesty upon her cheeks.

“Her hand seeketh employment, her foot delighteth not in gadding abroad.

“She is clothed with neatness, she is fed with temper-



NATURAL POSITION OF TWINS



NATURAL POSITION OF THE CHILD AT PERIOD OF NINE MONTHS

CHAPTER XII.

PREGNANCY AND GESTATION.

PREGNANCY is divided into uterine and extra-uterine. Extra-uterine pregnancy is divided into three kinds—Fallopian pregnancy, Ovarian pregnancy, and Abdominal pregnancy. In extra-uterine pregnancy, the product of conception seldom reaches its full growth, and if it should, cannot be expelled, and its destruction is an inevitable consequence of Nature's error. The foetus usually dies about the second or third month and putrefies.

In natural pregnancy the product of conception is deposited in the uterus, and is there developed. There is sometimes false uterine pregnancy, which will deceive the most experienced practitioner.

A NATURAL OR UTERINE PREGNANCY.

Natural gestation or pregnancy may be said to commence the moment the ovum is penetrated by the spermatozoa in the Fallopian tube, and is subsequently received in the uterine cavity, where it is nourished by the female parent. If the male sperm does not come in contact with the ovum in the Fallopian tube, no change takes place in it, except a slight alteration while on its passage along the Fallopian tube, being received into the uterine cavity where it is ultimately lost or decomposed. After impregnation a series of remarkable changes take place in the uterus, whereby it becomes fitted for the protection and development of the ovum during a period of nine months or forty weeks. The uterus meantime undergoes a new state of growth or development, which is occasioned by the stimulus of impregnation and the growth of the ovum. The ration of increase

of the uterus during gestation is subject to great variation. The enlargement in ordinary cases, is expressed by the following table. The size of the gravid (a fully developed uterus) has already been given in another chapter.

Rate of Increase of Gravid Uterus according to Months.

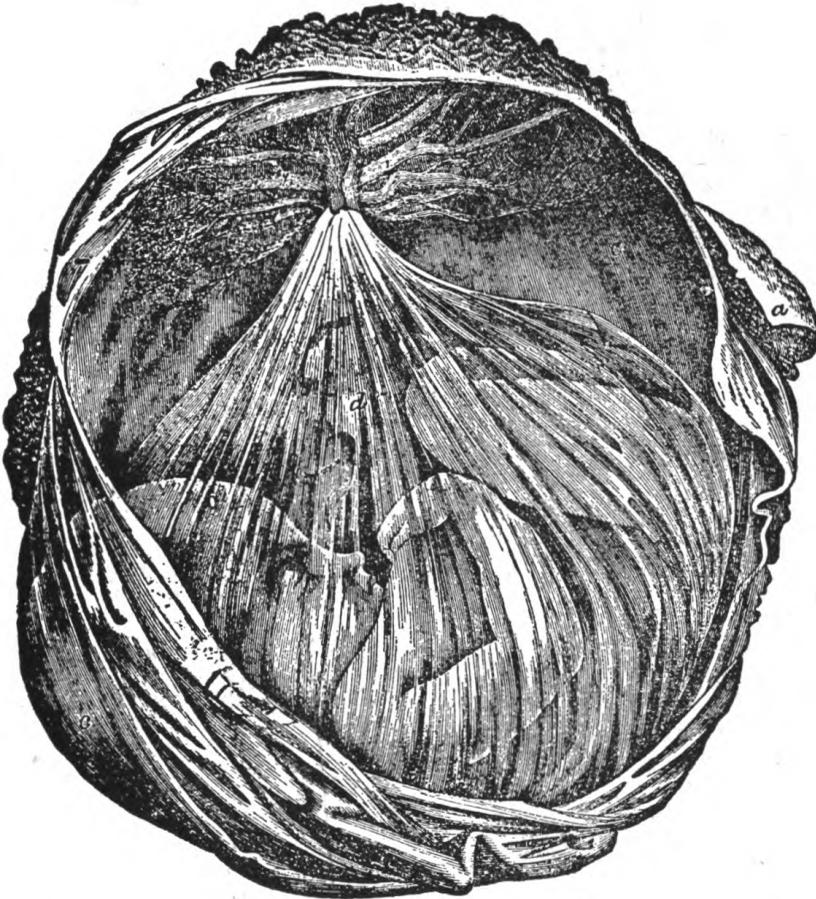
	Length.	Breadth.
End of 3 months.....	4½ to 5 inches.....	4 inches
End of 4 months.....	5½ to 6 inches.....	5 inches
End of 5 months.....	6 to 7 inches.....	5½ inches
End of 6 months.....	8 to 9 inches.....	6½ inches
End of 7 months.. . . .	10 inches.....	7½ inches
End of 8 months.. . . .	11 inches.....	8 inches
End of 9 months.. . . .	12 inches.....	9 inches

There is considerable change in the form of the uterus during the first four months of pregnancy, without any apparent difference in the figure of the female. From the fourth month there is a rapid bodily enlargement. There is, however, no increase in the thickness of the walls of the uterus. On the contrary, they become gradually thinner, up to the period of nine months. The neck of the womb commences to shorten about the fifth month; at the end of nine months it is obliterated, which is occasioned by the lateral extension and expansion of the uterus.

It is now necessary again to trace the ovum from the time it is expelled from the ovary and received into the Fallopian tube. It has been stated that no apparent change occurs unless it is impregnated by the male sperm, which impregnation usually takes place in the middle and lower third of the tube. When the ovum of the egg is expelled from the Graafian vesicle, it has attached to its surface a portion of the membrana granulosa. (*Fig. 20.*) As the egg passes along the upper third of the tube, this layer of cells becomes divested. (*Fig. 21.*) Should it now meet the male sperm, material changes take place. The spermatozoa readily pen-

At the sixth month, or one hundred and eighty days, down makes its appearance upon the head, and the nails are distinguishable. The whole form of the child is more distinct; length twelve inches, weight two pounds.

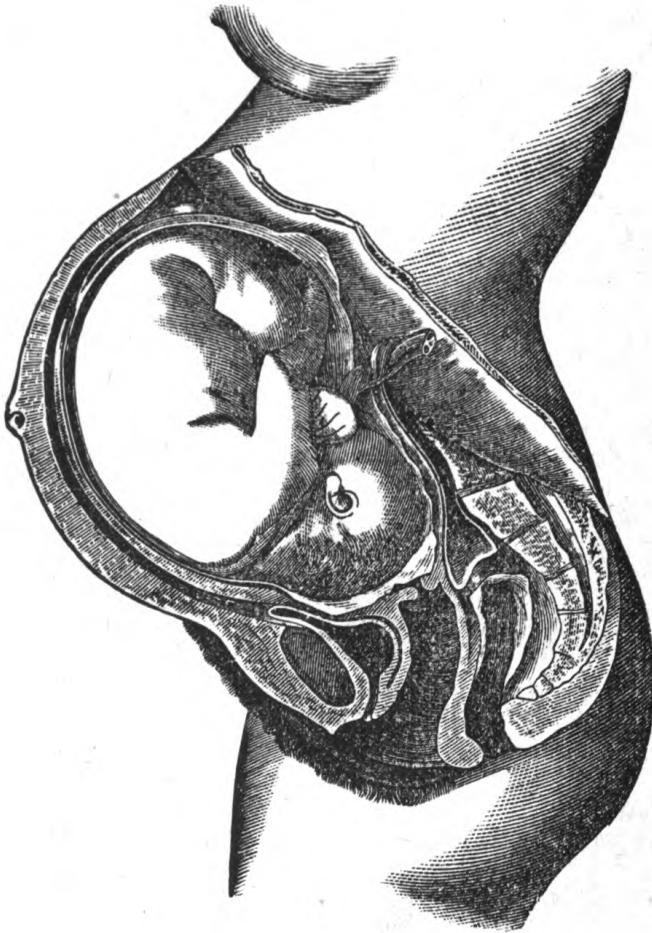
FIG. 54.



Fœtus at the age of five months, with the placenta and membrane. The chorion is laid open to exhibit the fœtus enclosed in the amnion. The amnion is attached to the center of the internal surface of the placenta, through which the cord passes. The external surface of the placenta is seen covered by the chorion and decidua.

fifth month there are signs that settle all doubt. The base of the uterus is now found within two fingers of the umbilicus. At the end of six months it is two inches above the

FIG. 60.



PERIOD OF NINE MONTHS WITH THE NATURAL POSITION OF THE CHILD

umbilicus; the head of the child may be felt without difficulty, as well as the action of the heart. At the end of the seventh month the uterus is still higher, and entered the

CHAPTER XIII.

CONFINEMENT.

Assistants—The Nurse—The Room—The Bed-Clothing—
The Baby's Basket—Labor.

WITH the signs of approaching labor, pregnant women are apt to become agitated and go about preparing for a work of extreme danger. Their fears are as groundless as such preparations are unnecessary. If they have pursued regular and temperate habits of life during gestation, and have done nothing to injure their health severely, they may rely with confidence upon the resources of nature to carry them safely through their confinement. When left to herself, nature's efforts are always adapted to the constitution of the patient; and adapted to the state of those delicate and sensitive parts which would suffer grave injury from sudden or ill-timed violence. All that is required of woman in labor, is a patient waiting on the course of nature's operations. The steps of advancement are sometimes slow, but are safe and cannot be hurried or disturbed with impunity. It is particularly true in child-birth that those who are most patient usually suffer the least.

Nature has, from the hour of the mother's own birth, been fitting her for the duties and the strains of child-birth. The wonderful life power which has developed her organism and has developed the child within her womb so regularly and without error, is fully equal to the completion of its task. A power which has shown such capabilities through the years of her life and the months of pregnancy, cannot be expected to fail in the last hours needed to finish the work it has thus far carried on so well.

CHAPTER XIV.

LACTATION.

Structure of the Breasts—Character of Milk—Signs of Good Milk—Influences on the Secretion Nursing.

WHEN delivery takes place, the functions of the genital organs cease, and the lively irritation that existed in them is transferred to the mammæ for the preservation of the child. To accomplish this, a saccharine and very nutritious fluid is secreted by the mammæ, which escapes by a slight suction of the child or by a slight titilation of the organ. This is called *Lactation*.

STRUCTURE OF MAMMAE.

At puberty in the female, the mammæ, or breasts, increase rapidly in size, and assume a firmness and plumpness, that disappear in those who have borne children and nursed their offspring.

The mammæ are composed of a number of glands with their ducts, in the centre of which they terminate in a prominence called the nipple, which is surrounded by an areolar, or a small, red or brown circle. In young females it is usually of a delicate red, but in females who have borne children it is of a brown color. The whole is covered with a thin, tender and soft skin.

If we divide the mammæ of a female lately confined through the centre of the nipple, we will find the structure arranged in a very simple manner. The secreting portions consists of minute cells, which, when distended with milk, are no larger than the smallest pin's head, and are scarcely visible to the naked eye. They are collected into groups

great anxiety or mental disturbance, and given to a wet nurse, very often recover from diseases that would have otherwise proved fatal.

The recovery, in such cases, is usually attributed to the quality of the milk. I believe it may be more reasonably attributed to the removal of the influence of the mother's mind from the infant, in the change of the nurse.

NURSING.

Nursing may be divided into *natural* and *artificial*.—Natural, is the direct application of the infant's mouth to the nipple from which it draws or derives its nourishment by the act of sucking. Artificial, is the furnishing of food to the child by artificial means.

a. NATURAL NURSING (*Fig. 63*).—Nursing by the mother requires but little teaching of the child. All that is necessary is to present the breast; the child will grasp it, and instantly there is a copious flow of milk. There is a sort of sympathy between the mother and the child—the one seeking what the other desires to give.

Some women have a great distaste for nursing, and positively refuse to do so, on account of the trouble and confinement imposed.

There is no question that it is the duty of the mother to allow her offspring to partake of the nourishment Nature has provided by the maternal font, provided her health and strength permit, and the child is not injured by the nature of the lacteal aliment. The process is equally advantageous to mother and child, in a healthy condition. It is Nature's food for the infant, and designed expressly for its further development and strength, while, as respects the mother, the drawing away of the fluid will prevent inflammation and ulceration of the glands of the breast, and drain from the pelvic and abdominal viscera the congestion usually attendant upon pregnancy. In this way many serious organic dis-

CHAPTER XV.

DISORDERS DURING PREGNANCY.

Pregnancy Natural—Nervous Disorders—Toothache—Sleeplessness—Nausea and Vomiting—Heartburn—Profuse Saliva—Intestinal Troubles—Constipation—Cramps—Colic—Disorders of Circulation—Excess of Blood—Bleeding at the Nose—Spitting of Blood—Distended Veins—Palpitation of the Heart—Shortness of Breath—Dropsy—Cough—Derangements of the Urine.

WHILE the reproduction of the species is a function wisely established by nature and wonderfully provided for in the economy of the system, the period of pregnancy nevertheless has a multitude of possible ailments. Most of these may be justly attributed to the increased sensibility of the frame, the thoughtless exposures or over-exertions of the prospective mother, or the incorrect habits of living so prevalent in society.

Very many of the disturbances peculiar to this period are quite light and some women even seem to suffer no inconvenience whatever, and in fact may be, throughout the period, in better health than usual. When there are difficulties, the system soon returns, as a rule, to its regular action by giving it the advantage of good hygienic regulations. It is quite out of place, therefore, for women to be turning to special treatment and the dosing with strong medicines for every trifling sensation that is out of the usual channel. First give scrupulous attention to the sensible rules of health, and if then serious disturbances continue, it will be time to adopt more active measures. Some annoyances and inconveniences must be endured as being naturally incident to the situation.

CHAPTER XVI.

PAINLESS CHILDBIRTH.

Childbirth a Natural Function—The use of drugs—Exercise—Bathing—The Bowels—Sleeping—Clothing.

MOTHERHOOD, woman's highest prerogative, has become her greatest dread. This is unnatural. Nature in the formation of the female organism has made every provision for the bearing of children, so that the act is strictly a physiological one, and it should incur no more danger to life than the performance of any one of the other important functions of the body. That there must be discomfort, is inevitable; for great changes cannot occur unnoticed and without disturbance; but that those changes can occur without pain and without danger, has been abundantly proven by those who have strictly obeyed physiological laws during the months of pregnancy. It is those laws that we will mention and explain in this important chapter.

Many recognize the fact that the women of savage tribes are inconvenienced and retarded in their usual duties but a few hours by the births of their children. If such untutored daughters of nature so well obey nature's laws by instinct, how much better should we, who can observe and learn from the highest intellectual standpoint, be able to avoid possible dangers.

The rules and suggestions we shall give upon this important subject of painless childbirth, may be fully depended upon. Thousands of women have been saved needless agonies by their observance. If they are followed from the beginning of pregnancy till its ending, the ending need not be dreaded. If the prospective mother does not learn them in time to commence early, she may commence late and be pro-

CHAPTER XVII.

THE CHANGE OF LIFE.

Menopause—Climacteric—Peculiar Cases—A Natural Change—Physical Changes—Ovarian Changes—First Signs of the Menopause—Flashes of Heat—Resemblance to Pregnancy—Irritability—Few Deaths—Discomforts Expected—Possible Diseases—Sexual Desire—Controlling Influences—A Word to Husbands—Disorders During Change of Life—Mental Disturbances—Melancholy—Obscene and Lascivious Thoughts—Loss of Appetite—Excitability and Volubility—Consumption and Cancer—Neuralgia—General Management

THE period of the disappearance of menstruation is far more uncertain than that of its commencement. As a rule menstruation continues from thirty to thirty-five years; so that a woman who began to menstruate at thirteen years of age will in all probability cease to do so between forty-three and forty-eight. But there are a great many exceptions to the rule. Usually the activity of the ovarian function is prolonged in life in direct ratio to the volume of the ovaries and the precocity of ovulation. Thus the girl who commences to menstruate at twelve, being well developed at that time, will probably continue to menstruate till fifty or even longer; while the girl who did not commence to menstruate till eighteen or twenty, on account of feeble development and small energy of the generative organs, will likely cease to menstruate at forty.

There are a great many departures from the rules that are perhaps more apparent than real. For instance, it is almost universally believed that activity of the ovaries or periodical ovulation must always be accompanied by a sanguin-

blooded women often become quite corpulent; and even slender women may grow quite stout and develop a full abdomen and fair sized breasts. But, again, others may grow thin and wrinkled and shriveled and sallow or waxy. In nearly all women the skin loses its former fairness and elasticity and becomes thicker and more liable to wrinkles. The voice usually becomes firmer and heavier and the mind stronger and more sedate. But it must be mentioned that women who have led lives of excessive or exhausting toil, now fall into feeble health and may acquire a peculiarly sharp voice and a remarkably perverse disposition.

Man, who has so much to enjoy from the placid and vigorous old age of his bosom companion, should see to it that her child-bearing period is not made one of wearying labor, unwholesome eating and excessive maternal duties.

SEXUAL DESIRE.

The question is often asked, Does a woman lose all sexual desire and enjoyment after her change of life? But it is a question that cannot be answered by simply yes or no. Some women declare that every vestige of sexual desire leaves with the cessation of menstruation; while others assert that the conjugal relationship is enjoyed as much or even more than formerly. It is evident that the shrunken condition of the sexual organs indicates that passion for the physical enjoyment of the sexual act is gone; but the mental enjoyment may continue, and those women who have never previously enjoyed the act from fear of conception may now actually experience greater pleasure in repeating it, when all fear is removed.

INFLUENCES CONTROLLING THE CHANGE OF LIFE.

The permanent cessation of menstruation is a natural occurrence and should, in healthy women, give no more than

CHAPTER XVIII.

OVER PRODUCTIVENESS.

RELATIVE PROPORTION OF THE MALE AND FEMALE SEXES.

THE more simple the organization of animals, the more fruitful or prolific they are. In some of the Entozoa and Mollusca, millions of ova are found. The *Aphides*, or plant lice, furnish a remarkable instance of fecundation. A single intercourse is sufficient to impregnate not only the female parent, but all her progeny down to the ninth generation. At the fifth generation a single *aphis* might be the great grandmother of 5,900,000,000 young ones. The progeny of three flesh-flies would consume a dead ox as quickly as would a lion. Nine millions of ova have been calculated to be spawned by a single codfish.

In the warm-blooded animals, the necessity of incubation or utero-gestation, places a limit to the number of animals. In the human female, the number of children is limited by reason of the time necessary for a woman to travail with each child, and the comparatively few years during which she is capable of bearing children. Many women bear children every twenty months. In some the interval is from twelve to fifteen months. Such fecundation, however, depends upon lactation, which generally prevents conception. Women usually bear a single child at a time. The proportion of twins to single children according to *Burdach*, is one to seventy or eighty. The proportion of triplets is one to six or seven thousand. Occasionally, five or six children are born at one birth.

The production of so many children at a birth, is evidence of a strong constitution in the female, and great activity in the ovaries. There must be as many ova eliminated at the

CHAPTER XXI.

WOMAN'S SPHERE OF ACTION.

THERE are many weighty facts and majestic truths, which, amid the conventionalities of a strained or artificial state of society, do not receive the philosophical consideration which their immutable irrefragability demands. Among these are those which comprehend "Woman's Sphere of Action"—the amelioration of her present condition—and her advancement toward her proper and *natural* position in the scale of elevated humanity. With the elements and principles involved in Woman's greatest perfection and happiness, the public mind cannot become too familiar.

When we speak of "Woman's Rights" and "Woman's Sphere of Action," we do not wish to be placed in the category of those Modern Pseudo-Reformers who would have women *unsex* themselves by running into those wild vagaries and excesses of a Political and Social nature which have of late years brought odium on the glorious cause of woman's perfect emancipation from the condition of the servant and mistress of man. We go for her advancement in every attribute consistent with her normal organism, and the attainment of every exaltation that will render her fully the *equal* of man in all the moral and social relations of general society. Woman was never designed to be ranked as the "mere beast of burden," nor to be the despised creature of man's sensualities, or, at best, the idol and plaything of the sudden generousities and caprices of his lordly nature. She was created to be his "Helpmeet"—his companion and co-equal—an indispensable half of himself—without whose conjunction the *homo genus* could not exist.

Much has been said of late years of Woman's *potentiality*, in respect to the position which she *naturally* holds to man.

CHAPTER XXII.

ELEMENTS OF FEMALE BEAUTY.

IMPORTANCE OF UNDERSTANDING THE SUBJECT OF HUMAN BEAUTY.

DR. PRITCHARD has well expressed a great truth in his observation that the "ideal of beauty of person is synonymous with that of *health* and *perfect organization*."

In fact, the perception of human beauty is the chief principle in every country which directs men in their marriages.

Sir *Anthony Carlile* thinks that "a taste for beauty is worthy of being cultivated." "Man," he remarks, "dwells with felicity even on *ideal* female attributes, and in imagination discovers beauties and perfections which solace his wearied hours, far beyond any other resource within the scope of human life. It cannot, therefore, be unwise to cultivate and refine this natural tendency, and to enhance, if possible, these charms of life."

Horne, in his "Elements of Criticism," observes "that a perception of beauty in external objects is requisite to attach us to them; that it greatly promotes industry, by promoting a desire to possess things that are beautiful."

Unboubtedly, we would say, that the *possession* of "beauty" and "worth" constitute not only the *bond* of attraction, but the *very life* of the social union.

The body is as much a desirable part of the human being as the mind. It is the medium by which *all* our senses are discernable. By the body do we communicate hopes, fears, affections and love, and receive them. Why should we, therefore, contemn as a piece of common clay that which is the only emblem of our existence? God created the body, not only for usefulness, but with loveliness. Then, what

CHAPTER XXIII.

SOME OF THE PRINCIPAL DISEASES OCCURRING FROM INFANCY TO PUBERTY.

IN a work of the present limits it will be impossible to speak of all the ailments incident to women and children, therefore reference will only be made to those of the most important and intractable character—the leading features of which will be succinctly and faithfully presented. It is, however, not expected that females uneducated in medicine will be enabled to treat of all the forms of disease mentioned in this volume. Diseases not unfrequently assume a very severe form, both in children and those of pubescent persons; hence the attention of some skillful practitioner will be promptly required, in order to maintain the *vis vite* of the organism from the ravages of the maladies.

The diseases of which this work shall treat will generally yield to the treatment and remedies suggested, and, therefore, in most cases, may be regarded as eminently reliable for their curative effects.

Before entering upon the subject of special diseases, it will be necessary to treat of *Irritation*, as it is a condition frequently occurring in children, and sometimes mistaken for inflammation.

IRRITATION AND SYMPATHY.

IRRITATION is produced from some exciting cause operating on some part of the system, and thence extending to other organs or parts, through a law of *sympathy*. The younger and more delicate the child, the more susceptible is its constitution to irritating causes. For instance, the slightest pressure of the teeth against the dental cartilage

country air will afford more relief and tend to keep down the irritation than all the medicine that can be administered. If the child cannot be taken into the country, it should be carried early in the morning into the open air, with its body well protected from exposure. It should be kept from the night air, while its sleeping chamber should be well ventilated.

The child's diet should receive strict attention. If the mother's milk agrees with it, it will require no other nourishment. If it is not nursed, the milk from the same cow should be given, after being boiled. If the bowels incline to be loose, a cracker soaked in the milk and it sweetened with loaf sugar, with a little nutmeg added, may be used. If the child is much debilitated, cream half diluted with milk may be given, and occasionally a few drops of wine with water and nutmeg.

CHOLERA INFANTUM, OR SUMMER COMPLAINT.

This is one of the most fatal diseases of children. It usually occurs during the first or second summer—frequently from the irritation attendant upon dentition. Another frequent cause is improper diet and the bad ventilation of the apartments in which the children, especially of the poorer classes of society, are compelled to live.

Symptoms.—The attack of Summer complaint is usually preceded by diarrhoea, existing in some cases for some time previously with the patient. Sometimes the attack will be instantaneous, commencing with violent vomiting and purging. At times the stomach is so irritable as to eject everything taken into it, even a mouthful of cold water, at the same time there is spasmodic pains in the stomach and bowels. The features become shrunken, the skin cool and clammy, the eyes half closed, while there is partial insensibility and twitching and starting. Insensibility may continue until it amounts to coma and death.

Scarlet-rash is of a *light* scarlet color. There is a form of Measles called *Rubeola Nigra* or Black-measles. They depend upon a low condition of the vital powers of the system. A similar condition of system is observed in Malignant Scarlet Fever.

Cause.—Like all other contagious diseases, Measles depends upon a species of Infusoria which locates in the air-passages, and are there nourished as in Scarlet Fever. They pass out under the epidermis as in Scarlet Fever, or they may pass into the air-passages and lungs, and thus produce inflammation, and plant the seeds of Consumption, particularly when they occur in grown persons with weak lungs.

If the vital powers of the system are low, they exert a greater influence, while the symptoms are likewise more violent.

Treatment.—Measles, in ordinary cases, require but little medical treatment. The only danger to be apprehended is from the damage which may be done to the lungs by the passage of the infusoria down into the air-passages.

If there is much fever give freely of pennyroyal tea containing a little ginger. Keep the patient warm and avoid cold draughts of air.

After the eruption disappears in measles, the skin is often found to be harsh and dry. If a tepid bath be taken and the skin well rubbed, it will change its character and afford great relief to the patient.

When the eruption disappears and leaves a dry, hacking cough, it should be removed as speedily as practicable, otherwise it may induce obstinate bronchial inflammation and consumption.

CROUP.

It is only within the present century that distinction has been made between Whooping-cough, Asthma, Bronchitis and Croup. Formerly they were regarded as one and the same complaint. By the light of modern science, however.

CHAPTER XXIV.

DISEASES OF FEMALES UNATTENDED WITH PREGNANCY.

WITHOUT a thorough acquaintance with the structure and functions of the reproductive organs, it will be impossible to comprehend and properly treat the many diseases or complications of derangements to which they are liable. These have been very clearly explained, and further elucidated by numerous engravings, in the preceding pages of this work, so that any female of ordinary intelligence and judgment will be able to readily master a majority of the complaints incident to the sex, without the special assistance of a medical practitioner.

DIVISION I.

DISEASES OF THE EXTERNAL ORGANS OF GENERATION.

DISEASES OF THE LABIA.—The labia are liable to inflammation from acrid discharges, syphilis, gonorrhœa, etc.

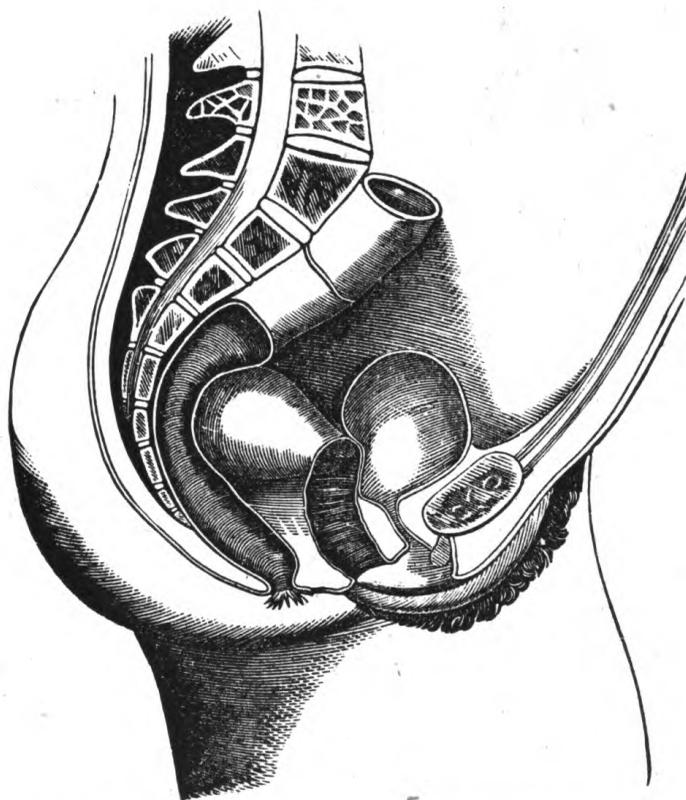
Symptoms.—Where there is much inflammation there is heat, swelling and throbbing, attended by fever. From the looseness and vascularity of the texture, the progress of inflammation is generally rapid, soon terminating in suppuration.

Treatment.—As the movement of the parts causes pain, the female should confine herself to bed. If the bowels are constipated, they should be opened by injections. Where there is a tendency to suppuration, the abscess should be opened on the inside of the lips and the pus pressed out.

Should the parts not incline to heal, a solution of sesqui-

pulsion of the fœcal matter there accumulated. Sometimes there is a mucus discharge from the bowels, produced by the irritation, while the retention of urine is not unfrequent. There may also be pains in the loins, extending down the lower extremities, causing fatigue in walking or standing.

FIG 73.

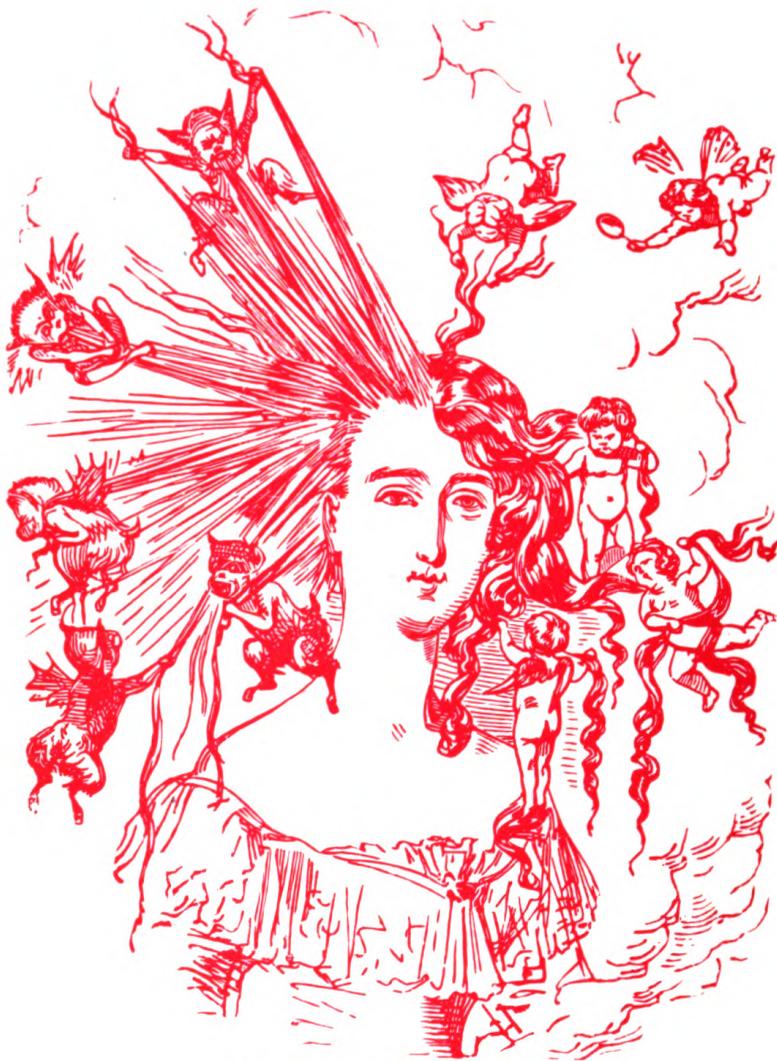


RETROVERSION, OR FALLING OF THE WOMB BACKWARD AGAINST THE RECTUM.

Causes.—Pregnancy, weakness of uterine support and increased weight of the fundus of the uterus, falls, sudden shocks, distended bladder, tumors in the uterus, such as polypi, which are usually attached to the fundus.

rific glands—the former being more abundant where the latter are the least abundant, and *vice versa*. They are absent on the soles of the feet and palms of hands, and numerous on the face, scalp, etc. They are little crypts or sacs, imbedded in the *cutis vera*, or true skin. (*Fig. 78, f*, and *Fig. 80.*) Sometimes there are several of these clustered around a duct, into which they open. Sometimes the ducts of these glands perform a double function, forming a sheath for the hair and outlet for their glands.

These glands (the sebaceous) secrete an oleaginous substance, which serves to keep the skin smooth and pliable, and to prevent it from becoming dry and cracked by the action of heat, etc. The secretion is found more abundant in those who inhabit warm climates, and with those whose occupations subject them to high temperatures.



HOW TO ARRANGE THE HAIR.

(444)

CHAPTER XXVII.

THE HAIR.

POPULARLY AND PHYSIOLOGICALLY CONSIDERED.

IN all ages of the world and among all nations, the hair has been regarded as one of the chief adornments of the person of the human family, while its healthy preservation and orderly arrangement have occupied much of the attention of the more cultivated and refined in every land. The hair is certainly one of the most important elements of that *ensemble* which constitutes the human being. Hence it is to the universal admission of this fact, that ingenuity has been put to the rack in every clime, with the view of discovering remedies capable of increasing, or of even creating the constituent characters of a fine head of hair, and also of ameliorating the defects of nature and of age. Notwithstanding all this, however, it is a matter of no little astonishment that comparatively so few artists of modern times have exercised their talents so as to demonstrate the advantage of taste, or taught knowledge of the subject of arranging a lady's hair in a becoming and symmetrical manner. As an American writer of considerable celebrity has well remarked, "There might be a hundred studies of the various modifications of style, with an analysis of the meaning and expression of each one—the merry and the melancholy, the dignified and the playful, the firm and the yielding, the proud and the timid, the sainted and the coquettish, the practical and the poetical—each finding a picture of her own peculiar style, and guarded against stumbling ignorantly and unconsciously upon one which is entirely out of harmony with her character. It is a

plaits, and tied up with bows, which was prevalent a few years ago, was not a new fashion, for there is a portrait extant of the son of Villiers, first duke of Buckingham (1637) with his hair thus ornamented. The fashion for young people to cover the hair with a silken net, which was lately prevalent both in England and America, as well as in France, was in vogue several centuries ago. Some of the nets were very elegant in form.

The tribes and people of all nations have some peculiarities in the mode of dressing the hair. Whether Ethiopian, Creole, or Indian, women have always given much attention to dressing the hair. In many instances extreme good taste is displayed, but in the majority the styles of wearing hair has not been much admired by the ladies of enlightened and civilized nations. In other instances, the head-dresses are uniquely fantastical and picturesque; but we will not now attempt a description of them.

MODERN METHOD OF DRESSING THE HAIR.

THE LAWS OF ART AND TASTE.

For a period much longer than is usual in such matters, the hair has been, until of late, worn Madonna-like, drawn plain over each cheek, after the fashion adopted by Queen Victoria of England. It has, however, been reserved for the regal beauty of an allied nation to modify this fashion. The Empress Eugenia has introduced a style that is equally in good taste with that of the British Queen. It accordingly may perhaps be said that with these illustrious ladies for a guide, we can hardly deviate from the sounder canons of taste. This idea, nevertheless, involves a plausible fallacy. Whatever the prevailing fashion, it must necessarily be modified to suit the immense diversity of contour in the facial line. The fashion of hair-dressing four or five years ago was almost identical with the styles of the reign of Louis XIV.

ringlets are suitable; but if the face is thin and sharp, the ringlets should be light, and not too long. Open braids are very beautiful when made of dark hair. A simple and graceful mode of arranging the hair, is to fold the front locks behind the ears, permitting the ends to fall in a couple of ringlets on either side behind. Great care should be taken to part the hair directly in the centre of the forehead. Persons with very long narrow heads may wear the hair knotted very low at the back of the neck. If the head is long, but not very narrow, the back hair may be drawn to one side, braided in a thick braid, and wound around the head. When the head is round, the hair should be formed in a braid in the middle of the back of the head. If the braid is made to resemble a basket, and a few curls permitted to fall from within it, the shape of the head is much improved.

FONTAGNES.—By this title is designated a ribbon, which forms an important ornament in certain styles of coiffures. The following is its origin: Mademoiselle de Fontagne, maid of honor to the Princess Palatin, by the favor of Louis XIV., the great duchess, who spent from fifty to a hundred thousand crowns a month, was the embodiment of the graces and the leader of the ton. While at a hunting party the wind having disarranged her head-dress, she fastened it with a ribbon, the bows of which fell over the forehead. This fashion was immediately adopted by all the ladies of the Court, and it passed with the name of Fontagne throughout France.

SUGGESTIONS FOR GRACE AND BEAUTY.

We have already given the modes of arranging and dressing the hair in all ages of the world. We may here present some of the peculiar means by which the grace and beauty of females are heightened among many modern nations, whether enlightened or uncultivated.

In Asia the hair has always received elaborate attention

CHAPTER XXIX.

STRUCTURE OF THE TEETH.

EVERY tooth is divided into three parts: The *Body*, or portion projecting from the gum and covered with the enamel; the *Root*, or fang, which is received into the socket; and the *Neck*, which connects the body and fang together. The body of the tooth contains a central cavity, that extends into the fang or root, which is the seat of sensation and nutriment.

The *first* teeth are called *deciduous* or milk teeth, and are twenty in number, ten upon each jaw.

The *second* teeth are called *permanent teeth*, and consist of thirty-two, or sixteen upon each jaw.

The structure of the deciduous and permanent teeth are the same, and composed of three distinct parts, viz., *Dental*, *Enamel*, and *Cement*.

1. DENTAL.—This substance is called the ivory of the tooth and enters into the formation of the greater part of the body and fangs. It is of a yellowish color and of fibrous structure, which fibers are tubular. These fibers are too small to contain blood-vessels, but are filled with a fluid, having the appearance of blood serum, which is the nourishing principle of the tooth.

2. ENAMEL.—This covers the grinding surface and the body of the tooth. It gradually tapers to an edge near the gum—is white, brittle, and extremely hard, consisting of solid fibers of an hexagonal form.

3. CEMENT.—This covers the surface of the teeth not invested by the enamel. It has the character of true bone and contains the same chemical constituents.

Each tooth fits into a bony socket so firmly as not to admit of motion in the healthy condition, and surrounded by a deli-

curious connection exists between the two sets of teeth. A cord passes from the sac of the permanent to that of the deciduous tooth. This was formerly supposed to give direction to the tooth. According to Dr. *Thomas Bell*, the sac of the deciduous tooth gives off a bud or shoot which subsequently becomes the permanent tooth. The cord-like appendage, therefore, is merely the connection existing between the offshoot and parent tooth. It becomes gradually atrophied as the permanent tooth develops, and finally appears as a mere thread.

The development of the permanent teeth causes the absorption of the deciduous teeth, so that the fangs entirely disappear, or are only retained within the socket of the jaw by a small portion of the gum that surrounds the body of the tooth.

MODE OF PRESERVING CHILDREN'S TEETH.

When a tooth commences to decay, it is upon the external surface, gradually extending toward the internal parts of the tooth. If no effort is made to arrest the decay, the destruction of the tooth proceeds rapidly on toward the internal cavity, while the exposure of the pulp or nerve causes the toothache. When a tooth commences to decay, it should be examined by a dentist, and the decayed part removed and the cavity filled with gold.

The decay of teeth is often hereditary. This might be avoided, in many instances, by proper attention to them in childhood. After the first teeth make their appearance, care should be taken to keep them in a cleanly condition. The mouth of the child should be washed once or twice a day with a linen rag saturated with cold water, while the first appearance of decay should be attended to at once by a dentist.

Some mothers are exceedingly anxious for their children to present an attractive appearance, and will spend several

CHAPTER XXX.

CAUSE AND TREATMENT OF FOUL BREATHS.

FOUL breath is occasioned by a variety of causes. Some of the most common are: Decayed teeth, perverted secretion of the salivary and mucous glands of the mouth, uncleanliness of the teeth, etc. The more obstinate cases result from an imperfect assimilation, or vitalization of the food, dependent upon a derangement of the liver or mesenteric glands; or it may be occasioned by a foul stomach.

A frequent cause of foul breath is a torpidity of some one of the excretory organs, such as the skin, kidneys, or bowels. I have known the most offensive breath arise from obstinate constipation of the bowels, the lungs eliminating a portion of what should be thrown off from them.

Should any one of the excretory organs, as the skin, kidneys, bowels, liver or lungs, cease performing their functions, one of the others will be called upon to perform an extra office. In this way, when the bowels or skin become affected, the lungs, being an excretory organ, will be called upon to throw off an additional waste from the system. If so, the breath becomes tainted.

Again, if the food is improperly assimilated by the liver or mesenteric glands, it cannot serve the purposes of nutrition. It is broken up or disintegrated by coming in contact with the oxygen of the blood, and eliminated by one of the excretory organs. If by the lungs, the breath becomes tainted. The excretory organs are all to be regarded as outlets of the system, for the purpose of eliminating decayed and waste material.

Treatment.—We must find out the cause that produces the foul breath. If the teeth be decayed, they are to be removed; those not too far gone should be plugged. The

CHAPTER XXXI.

THE CARE OF CHILDREN.

THE proper management of children is the most important subject that can be brought to the consideration of a parent; and yet, it is one that has been greatly neglected. Mothers undertake the management of children without previous instruction, thinking it can be learned by instinct or by affection. The consequence is they find themselves too often in a condition of uncertainty and trouble, and act not unfrequently directly in opposition to the best physical and mental welfare of their charges. Undoubtedly the proper management of a child begins even before birth. Prenatal influences and education are of vast importance; yet how greatly neglected, and persistently misunderstood! Those who would have healthy children, must be themselves healthy. They must obey the laws of nature and morality. They must not expect good fruit from poor soil. Physical strength, good organization, agreeable temper, and nobleness of mind beget their like; drunkenness, debility, debasement of body and mind yield similar characteristics in the progeny. Children who inherit the former start from the highest vantage ground; children with the latter start in the race of life handicapped and at a great disadvantage. From the earliest moment after conception the mother should pay even more than usual care to her personal health. Her clothing should be loose and comfortable, and adapted to the gradual development of her abdomen and breasts. Tight lacing is injurious to both child and mother, and should be carefully avoided. The judicious use of tepid baths once or twice a week, with a daily sponge bath of luke-warm water, followed by friction with a coarse towel, will be conducive to her welfare. The mother should also take

age too tight around the abdomen. It should be loose enough to admit the introduction of a finger between it and the belly. The proper use of the bandage prevents rupture at the navel, while if applied too firmly it compresses the abdominal cavity, so that in the forcible descent of the diaphragm in the act of crying, coughing and straining, it presses the internal organs downward and forces the bowels through the natural openings in the walls of the abdomen, thus producing rupture in the groin. The bandage should be worn for four to six months before it is laid aside.

The navel string usually separates in a week's time, but it may be delayed for twice this length of time. This will make no material difference, and the rule is to allow it to drop off of its own accord. If the navel is a little sore after the separation of the cord, or if excoriation occurs before it is fully separated, cleanliness in connection with a bland, soothing salve will be all that is required.

CLOTHING FOR THE INFANT.

To be more explicit about the bandage, which has been already mentioned before, it may be added that it is usually cut the selvage way of the material, as are cuffs and wristbands. Some persons prefer the horizontal strip as being more elastic, while we have known a prominent physician who forbade the use of any but bias bands, especially for boy babies. The band should be cut in one piece, and never hemmed, since any seam might hurt the tender body it is to girdle. Sometimes the band is bound with silk flannel binding and sometimes buttonhole-stitched on the edges with coarsely twisted silk floss, but generally the edges are left raw. Knitted bands are excellent. For these cast on one hundred and thirty stitches, and knit with four needles in Saxon yarn or zephyr worsted, in the well-known rib-stitch, knit three and turn two. Knit the band from six to seven inches deep. This band is elastic enough to yield to every breath of the infant and yet sufficiently strong to afford sup-

possible—if not, the bath should be given in a perfectly warm room. Have the clothing hanging at the fire, well warmed and ready to put on at once. The petticoats should be put one in the other, and the dress over them, so that all three may be slipped on at once. Every little waist should be furnished with buttons or buttonholes, and with drawing strings at top and bottom for drawing to the proper size.

An infant's mouth should be cleaned several times a day with a soft rag dipped in clear water. This is especially important in summer and during dentition.

Amount of sleep required each day by children:

At 4 months..	20 hours of sleep is required.
At 6 months..	18 hours of sleep is required.
At 1 year..	15 hours of sleep is required.
At 2 years..	13 hours of sleep is required.
At 4 years..	12 hours of sleep is required.
At 7 years..	11 hours of sleep is required.
At 9 years..	10½ hours of sleep is required.
At 14 years..	10 hours of sleep is required.

INFANT FEEDING.

Whenever possible, breast milk should be the infant's food. Young infants should be able to obtain about a quart of milk a day from this source; at three months the demand is for three pints; at six months for nearly two quarts. Early in its life the babe should be fed once in two hours, and gradually the interval should be extended until the child is nursed about six times in the twenty-four hours. If the mother finds her milk supply scanty or too rapidly failing, she must use such means as tend to promote the secretion of milk. All powerful emotions and excitements must be avoided. Gentle friction, electricity, moderate coition, and a proper diet favor the lacteal flow. The diet should be generous, avoiding rich and made dishes, using plenty of milk, eggs, meats, fowl, game, fish, and a very moderate

skim off carefully half a pint, or the last tenth of milk just stripped from a cow. For example, if a cow gives five quarts, the last pint may be used. The milk must be largely diluted with water, according to the following schedule. Milk is to be made more nutritious as the child advances in age, regard being had, not to mere age, however, but to the condition of the child—the schedule, being arranged to suit vigorous children, will not suit feeble ones, who must be kept back on the scale.

Schedule for the dilution of cow's milk.

Age of child.	Milk Gills.	water Gills	Whole quantity Gills.
2 to 10 days	1¼	3¼	4½
10 to 20 days	1¾	4¼	6
20 to 30 days	2½	6	8½
1 to 1½ months	3	6¾	9¾
1 to 2 months	3½	7	10½
2 to 2½ months	4	7½	11½
2½ to 3 months	4½	7½	12
3 to 3½ months	5	7½	12½
3½ to 4 months	5½	7½	13
4 to 4½ months	6	7½	13½
4½ to 5 months	6½	7½	14
5 to 6 months	7	7	14
6 to 7 months	7	7	14
7 to 8 months	8	6	14
8 to 9 months	8¼	6	14¼
9 to 10 months	8½	6	14½
10 to 11 months	8¾	6¼	14½
11 to 12 months	9	5½	14½
12 to 15 months	9¼	5¼	14½
15 to 18 months	9½	5	14½
18 months	10	5	15

If the milk be too strong, indigestion will follow, and the child will lose instead of gaining strength. When par-

and again the respiratory act begins with the labored expiratory act.

EVACUATIONS OF A CHILD.

The healthy motion varies from a light orange yellow to a greenish yellow, and in number, from two to four times daily.

Smell should never be offensive. Slimy, mucous-like, jelly motions indicate worms. Offensive, acid, pale-green motions indicate a disordered stomach. Dark-green evacuations indicate acid secretions and more serious stomach or bowel disorder.

Fetid, dark-brown stools are present in chronic diarrhœa. Putty-like, pasty passages are due to acidity curdling the milk or to torpid liver.

GENERAL SIGNS OF HEALTH IN THE INFANT.

A child healthy from birth ought to have attained a certain size and development at a certain age. It should not at the third month look like a new-born child, or at the twelfth month like one of six months. This applies also to the degree of fatness. Rotundity is the beauty of youth. Dr. Meigs says of a healthful child: "Its tissues are firm and solid, its surface of a cool and pleasant temperature, its coloration of a clear and exquisitely white, firmly tempered with a faint rosy tint in a warm atmosphere, or slightly marbled with light bluish spot in a colder air. Few marks more certainly indicate a healthful temper of the constitution than the clear and exquisitely tinted pink color of the palmar and plantar surface of the hands and feet of a young child. Nothing, indeed, can be more beautiful or perfect in shape or contour than the figure of a fine, hearty young child; nothing more pleasing to the eye than its delicate but vivid coloring; and nothing more expressive of the fullness of health and vitality than its whole appearance." If, instead of these marks, we find emaciation, soft tissues, a

CHAPTER XXXII.

HYGIENE AND CARE OF THE AGED.

IN olden times the alchemists claimed to have discovered the elixir of life. They said that old age might be retarded and life greatly prolonged by means of an elixir having the power of preventing or suspending physical decay.

The possibility of prolonging life has in all ages been noticed by great thinkers.

The latest scientific knowledge in regard to this subject may be stated as follows: The principal characteristics of old age, as demonstrated by anatomical research, are a deposition of fibrinous, gelatinous, and earthy material in the system. Every organ of the body, during old age, is especially prone to ossific deposits. The earthy deposits have been found to consist primarily of phosphates and carbonates of lime combined with other calcareous salts.

Man begins in a gelatinous and ends in an osseous or bony condition. From the cradle to the grave a gradual process of ossification is undoubtedly present; but after passing middle age the ossific tendency becomes more markedly developed until it finally ushers in senile decrepitude. These earthy deposits during old age materially interfere with the due performance of function by the organs; hence, we find imperfect circulation in the aged; the heart gradually becomes ossified; the large blood-vessels blocked up with calcareous matter, and nutrition hindered.

"If repair was always equal to waste, life would only terminate by accident." It is the opinion of eminent scientists that the majority of all who pass sixty-five years suffer more or less from these ossific deposits. Therefore, hearing these facts in mind, it is plain that the real change which produces old age is, in truth, nothing more or less

favors the deposition of these salts in the system. The more nitrogenous our food, the greater its percentage of calcareous matter; thus a diet composed principally of fruit, from its lack of nitrogen, is best adapted for preventing or suspending ossification.

Moderation in eating, then, must ever be of great value as an agent for retarding the advent of senile decay. Large eaters more rapidly bring on ossific deposits by taking in more than is utilized or excreted, naturally resulting in blockading the vessels and destroying their normal functions. According to the best authorities, the following seem to be the best articles of food as containing the least of earthy salts: Fruit, fish, poultry, flesh of young mutton or beef; because, as before stated, they are much less nitrogenous. Fluids, as part of the diet, is of special import. All well and spring water contains considerable of the earthy salts, and should, therefore, be avoided, and cistern water used in its stead, because water is the most universal solvent known. Therefore, if when taken into the system clear of foreign matter, it is to that extent the better prepared to dissolve and take up those earthy salts and convey them out of the system. The addition of fifteen or twenty drops of dilute phosphoric acid to the glass of water, and drunk three times a day, will add to the solubility of these earthy salts.

RULES FOR THE CARE OF THE AGED

1. The aged should not endeavor to perform the feats of agility, strength, endurance, and "of digestion," which were once their pride, especially during the extreme heat of summer.
2. The aged should avoid torpor of the bowels and constipation. Straining at stool may cause apoplexy.
3. Do not give up all mental and bodily work.
4. In the chill of any evening, or of early autumn, the

CHAPTER XXXIII.

THE CARE OF THE EYES, EAR, SKIN, TEETH, MOUTH, HANDS, AND FEET.

To take proper care of the eyes is to do all we can to avoid such diseases as are avoidable.

TEST OF EYESIGHT.

Boys often discover their near-sightedness by finding that their playmates can read signs, and see clocks and faces at much greater distances than they can. If any, who are not near-sighted, wish to compare their powers of vision, they can find convenient tests in the heavens at night.

Almost everybody knows the constellations of the Great Dipper and Pleiades. Both of these furnish tests of the range of vision. In the latter, a good eye can readily distinguish six stars; one of higher power can detect eleven; one of extraordinary power can pick out thirteen or fourteen. A telescope brings from fifty to a hundred within easy range.

The middle star in the handle of the Great Dipper has a companion star, which a good eye can make out. There is also a third and fainter star, which demands superior vision to detect. Very strong eyes can pick out some of the moons of Jupiter, particularly when two of them happen to come into conjunction.

While the winter sky is bright and favorable, any reader can make the test. Near-sightedness is a growing defect among young people, and may be corrected in part by looking at distant objects in the heavens or on the ocean.

artificial light, or light far from a window which is too small for the room and for a dark day. When the light is such as to render it difficult to see the work or print before us, a proper regard for the preservation of vision will compel the immediate stopping of the work. Of course, there are different kinds of work requiring different amounts of light, but the general rule just stated will hold good.

2. Light may be imperfect from its unsteadiness. It is this quality that renders the electric light harmful to vision. Gas light often exhibits a degree of flickering very trying to the eyes.

3. The light may be steady, but the car or carriage in which we are seated may move. The attempt to read in the cars is a fruitful source of injury to the eyes. Some of the worst cases of muscular weakness of the eyes have been derived from this cause.

4. The practice of reading while in a reclining position upon a lounge or in a bed causes the light to enter the eye at such an angle as to require an undue amount of effort in order to see distinctly for a long time. Such a position should always be avoided.

When possible, the light should fall upon the printed page or upon our work from the left side of the body, and from behind the shoulders. In this way the movements of the right hand least obstruct the light and the rays are reflected with greatest directness from the page to the eye.

RULES FOR THE PRESERVATION OF GOOD SIGHT.

The way to obtain and maintain the best eyesight may be summed up in these plain propositions:

1. Act as if the eyesight were of more importance than any other thing on earth.

2. Have every child's eyes carefully examined by an expert before it is given specific tasks to perform calling for the full exercise of healthy eyes. If the eyes are found

CHAPTER XXXIV.

EARLY RISING AND OPEN-AIR EXERCISE.

THERE is no time equal in beauty and freshness to the morning, when nature stands before us like a young bride, from whose face the veil which covered her loveliness has been withdrawn. The whole material world has a vivifying appearance. The husbandman is up at his labor, the forest leaves sparkle with drops of crystal dew, the flowers raise their rejoicing heads toward the sun, the birds pour forth their anthems of gladness, and the wide face of nature itself seems as if awakened and refreshed by a mighty slumber. All these things, however, are hid from the eyes of a sluggard; nature in her most glorious aspect is to him a sealed book, and while every scene around him is full of beauty, interest and animation, he is passionless and uninspired. In vain does the cock proclaim that the reign of day has commenced. In vain does the morning light stream fiercely through his window, as if to startle him from his repose. He hears not, he sees not, for blindness and deafness rule him with desperate sway, and lay a deadening spell upon his faculties, and when he does at length awake, far on in the day, from the torpor of his benumbing sleep, he is not refreshed.

There is a freshness, a purity in early morning, which, to the physical and moral man, is restorative and delightful. It is seldom that the rich and fashionable of the world taste its ethereal joys. Its mystical spirit drinks in the perfumed breath of awakened creation, which is almost gifted with supernatural power. Those who would live long and see happy days, with sound health, must habitually be early risers. The difference between rising every morning at six and eight, in the course of forty years, amounts to twenty-

CHAPTER XXXV.

WHAT AND HOW TO EAT.

Proper care of the stomach. What digestion means. Mouth Digestion. Stomach Digestion. Intestinal Digestion. Foods and their classification. Fish, oysters, clams, lobsters and shrimps. Eggs, milk, buttermilk, goat's milk. Cheese, meats, fowls, fruit, apples, peaches and pears. Quinces, grapes, raisins, figs and prunes. Oranges, pineapples, nuts, small fruits, vegetables, potatoes, rice, barley, beans, onions, carrots, cabbage and turnips, bread.

It is evident that the stomach is one of the most important organs of the body. It receives and in a great measure prepares the food that nourishes every organ and tissue of the body. It is the food we eat that makes the blood, and if the blood is impure or laden with improper substances we must expect the whole organism to be affected. Without good, rich blood the heart becomes weak, the liver becomes obstructed and the kidneys are overburdened, and other organs are endangered.

To properly care for the stomach is a matter of great concern to everyone; and to know what to eat and how to eat means to know how to prolong life and to avoid sickness. Many persons of delicate constitutions are able to keep well and live to old age by observing the rules of proper eating; while, on the other hand, many who are naturally endowed with robust constitutions are continually suffering from sickness and die early, because they disregard all laws of health and eat improperly.

Before we speak of foods and their properties let us glance at the process of digestion, that we may better understand

the physiology of eating and the reasons for selecting suitable foods.

WHAT DIGESTION MEANS.

Many people think that the stomach is the only organ that digests food, and have very little idea of what digestion really means or how it is accomplished. The digestion of food means its proper preparation for being taken up by the blood current and carried to the various parts of the body to nourish tissues.

There are a great many different kinds of structures and tissues in the human body and they are all constructed out of the food we eat. But that food must be varied in character to meet the requirements and must be suitably prepared for its assimilation. The different processes involved in the digestion of food are interesting.

First, the mouth has an important part to play. When food is received it excites the action of what are known as the salivary glands, which secrete the saliva. This saliva has an active principle, called ptyalin, which, when mingled with the food, partially digests it. To get the full benefit of its action it must be thoroughly mixed with the food, which is accomplished by the act of chewing. This also excites the salivary glands and causes an increased flow of saliva, which serves to moisten the food as well as help digest it. Thus it can be readily understood that all food must be thoroughly masticated; not merely to make it moist and fine enough to swallow, but to mix it well with the ptyalin which partially digests it and prepares it for the stomach. Rapid eating is a prolific source of dyspepsia. Even mush and all other soft foods should be chewed about in the mouth before being swallowed, so as to render them easy of digestion. Those who observe this rule will avoid much trouble.

The stomach is one of the most important organs of the body, for if it fails to do its duty the whole organism soon

CHAPTER XXXVI.

HOW TO LIVE LONG AND ENJOY LIFE

THE following rules should be studied well and made the guide for daily living. We can have but one life to live in this world; then why not live it well? Nearly all the diseases and ailments can be avoided by knowing beforehand how to live. Our journey is short, at the most, and we should make it as pleasant as possible to ourselves and those about us. Health is the richest blessing in the power of Nature to bestow and we can all receive it at our will. At first it may require efforts to follow strictly the rules of right living; but habit soon makes them easy, for they are but the natural laws of life.

I. KEEP THE MIND AT PEACE.

Worry and fret, temper and anger never accomplish anything but harm. They actually injure the brain cells and cause the formation of poisonous materials that damage the whole nervous system and cause disease. No one can digest a meal while in a fit of anger; and all ugly manifestations prevent the proper performance of functions. Peace of mind is the greatest happiness of life. Cultivate it till it becomes as a second nature. It will help to keep you vigorous and its influence will help all those with whom you are associated. Think twice when tempted to speak or act in anger or even to think in anger. You may add years of happiness to your life by observing this rule.

2. TAKE REGULAR PERIODS OF REST.

The nerves and other tissues of the body cannot be under continual strain without injury. They must have rest from

labor, sufficient to allow them to recuperate from a strain. The regular routine of life is wearing upon the system at best; and when it is possible to secure an occasional change of climate and surrounding, it should be done. Every woman should take a trip away from home at least once a year. The relaxation from household cares and duties for a month, or even a week, will strengthen the body for the work that must be performed. It may seem impossible to take such a vacation, but by good management with the help of a kind husband or other members of the family, it can usually be arranged. Mothers need the rest and change, it will prolong life and increase its happiness.

3. SECURE REGULAR SLEEP.

Nature has made provision for periodical periods of rest during sleep, in which the strength is recuperated and the injuries inflicted upon tissue by the exertions of the day are repaired. The old saying, "early to bed and early to rise," is good advice; provided that when you go to bed you will go to sleep at once, and that you will arise as soon as you wake up. The cares of the day and the possibilities of the morrow are poor bed companions. Dismiss them when you enter your bed-room and make their dismissal emphatic. Let your hours of sleep be regular, and in number as many as the system demands, but no more. Too much sleep is debilitating, and unless the body is peculiarly exhausted, from six to eight hours are sufficient. When it is possible, an afternoon nap of half an hour is always of great benefit.

4. EAT CORRECTLY AND REGULARLY.

In the chapter on "How to Eat," will be found descriptions of the various characteristics of foods and of the process of digestion. Let the meals be regular and avoid eating between meals. Nature seeks rhythmical and periodical actions, and nowhere is it more desirable to satisfy her than in the matter of eating. Never eat to excess, avoid

CHAPTER XXXVII.

PRIMORDIAL PHILOSOPHY

WOMANLY HEALTH AND BEAUTY.

SEXUAL ATTRIBUTES.

My purpose is not to appear before the world as a vague speculator upon abstruse questions of philosophy, but as an humble teacher in relation to those organic elements which so nearly affect the health, beauty and longevity of the human female, and, through her, the well-being of the entire race of humanity. Like Socrates, I believe that SELF-KNOWLEDGE is the basis of human action, happiness and exaltation. "Tell me, Euthydemus," said he, "have you ever gone to Delphi?" "Yes, twice," said he. "And did you observe what is written somewhere on the temple wall—'know thyself'?"

To *know* one's-self, is not merely to know one's own *name*, but to know one's abilities, and how to adapt them to the service of mankind. Those who know themselves know not only what is suitable for themselves, but for their species. Socrates earnestly recommended those who conversed with him to take care of their *health*, both by learning whatever they could respecting it from men of experience, and by attending to it, each for himself, throughout his whole life, studying what food or drink, or what exercise, was most suitable for him, and how he might act in regard to them so as to enjoy the most vigorous and perfect health.

In exhorting Epigenes to exercise his body, he said: "The body must bear its part in whatever men do; and in all the services required from the body, it is of the utmost importance to have it in the best possible condition; for even in

CHAPTER XXXVIII.

GONORRHOEA, OR CLAP.

THIS is a most annoying difficulty, and is of such a private nature that most persons feel a hesitancy in speaking to their family physician concerning it. For that reason its characteristics and treatment are here given especial mention.

It is always the direct result of contact with the poisonous discharge from some other person afflicted with it. The symptoms manifest themselves in from two to ten days after contact. There is itching of the urethra and burning sensations upon urinating. Soon a discharge is noticed, at first small in quantity, clear and sticky; but afterward becoming quite copious and creamy and in severe cases yellow or greenish. Women often have this discharge in the vagina as well as in the urethra. It may continue, under the most favorable circumstances, from three to six weeks, and under unfavorable circumstances may run indefinitely into a low form of discharge called gleet.

Treatment.—Thoroughly cleanse the parts with a solution of boric acid (twenty grains in a pint of warm water) three times a day. Use a soft piece of linen for this purpose, and after washing, burn the rag and use a new one each time. Be very careful not to get any of the discharge or the water containing it into the eye, for it may cause specific inflammation of a most excruciating character, liable to cause blindness.

Internally, use the following prescription:

℞ Fld. Ext. Pichi ℥j
Fld. Ext. Saw Palmetto ℥ij.
Simple Syrup ℥v.

M. Take a teaspoonful four times a day.

Also take immediately after the above, five grains of bi-

CHAPTER XXXIX.

HYGIENE AND HOUSEHOLD RECIPES, TABLE OF MEDICINES AND DOSES, TABULATED MATTER, ETC.

TO PURIFY SINKS AND DRAINS.

To one pound of common copperas add one gallon of boiling water, and use when dissolved. The copperas is deadly poison, and should always be carefully labeled if kept on hand. This is one of the best possible cleansers of pipes and drains.

TO WASH GREASY TIN AND IRON.

Pour a few drops of ammonia into every greasy roasting-pan, after half filling the pan with warm water. A bottle of ammonia should always be kept on hand near the sink for such uses; never allow the pans to stand and dry, for it doubles the labor of washing, but pour in water and use the ammonia, and the work is half done.

TO CLEAN CARPETS.

Shake and beat the carpets well; lay them upon the floor and tack them firmly; then, with a clean flannel, wash them over with one quart of bullock's gall mixed with three quarts of soft, cold water, and rub it off with a clean flannel or house-cloth. Any particular dirty spot should be rubbed with pure gall. Carpets cleaned in this way look bright and fresh.

TREATMENT OF OILCLOTH.

Oilcloth ought never to be wetted, but merely rubbed with a flannel and polished with a brush of moderate hardness,

exactly like a mahogany table; and by this means the fading of the colors and the rotting of the canvas are entirely avoided.

FLANNELS.

Flannel should always be washed with white soap, and in warm, but not boiling water.

DAMP CLOSETS.

For a damp closet or cupboard, which is liable to cause mildew, place in it a saucerful of quicklime, and it will not only absorb all apparent dampness, but sweeten and disinfect the space. Renew the lime once a fortnight; if the place be very damp, renew it as often as it becomes slaked. Lime may be used in the same way for water-closets and out-buildings.

DAMP WELLS.

Line the damp part of the wall with sheet lead, rolled very thin, and fastened up with small copper nails; it may be immediately covered with paper, and so hidden from view. The lead is not to be thicker than that which lines tea chests.

WHITEWASH FOR ROOMS.

Take four pounds of whiting and two ounces of common glue; let the glue stand in cold water over night, then heat it until dissolved and pour it hot into the whiting mixed with cold water. This makes a nice, smooth whitewash.

WHITEWASH THAT WILL NOT RUB OFF.

Mix up half a pailful of lime and water ready to put on the wall; then take one-fourth pint of flour, mix it with water, then pour on it sufficient quantity of boiling water to thicken it, and pour it while hot into the whitewash; stir all well together and use.

TO BLACKEN HEARTHES.

Mix black lead and whites of eggs well beaten together; with a painter's brush wet the hearth thoroughly all over; then scrub it bright with a hard brush.

TO REMOVE FLY-SPOTS.

Dip a camel-hair brush into spirits of wine, and apply it to remove fly spots.

MUCILAGE.

An excellent mucilage may be made by taking one ounce of gum tragacanth, as much corrosive sublimate as will lay on a silver five-cent piece; put it into a jar and pour over it one quart of cold, soft water; let it stand twenty-four hours; then stir, and it is ready for use, and it will keep as long a time as is desired.

LIQUID GLUE.

Dissolve 33 parts of best glue, in a steam bath, in 36 parts of water; then add gradually, stirring constantly, 3 parts of nitric acid, or enough to prevent hardening when cold.

HOW TO KEEP MEAT.

Meat is much better for family use when at least one week old in cold weather. Hang up a quarter of meat with the cut end up, the reverse of the usual way, and the juice will remain in the meat and not run to the cut end and dry up by evaporation.

TO RESTORE AND PRESERVE FLOWERS.

Faded flowers may be generally more or less restored by immersing them half way up their stems in very hot water, and allowing them to remain in it until it cools, or they have recovered. The scalded portion of the stem must then be cut off, and the flowers placed in clear, cold water. In this way a great number of faded flowers may be restored; but there are some of the more fugacious kinds on which it proves useless. Flowers may also be preserved and their tints deepened by adding to the water a little solution of

carbonate of ammonium and a few drops of phosphate of sodium. The effect of this in giving the flowers a deeper color and a stronger appearance is quite wonderful; and, by cutting off every other day about half an inch of the stems of the flowers with a sharp knife, they may be kept as long as their natural life would last in the fields or woods.

HINTS FOR THE TOILET.

TO CLEAN HAIR BRUSHES.

Dissolve a piece of soda in some hot water, allowing a piece the size of a walnut to a quart of water; put the water into a basin, and, after combing out the hair from the brushes, dip them, bristles downward, into the water and out again, keeping the backs and handles as free from water as possible. Repeat this until the bristles look clean; then rinse the brushes in a little cold water; shake them well, and wipe the handles and backs with a towel, *but not the bristles*, and set the brushes to dry in the sun, or near the fire. Wiping the bristles of a brush makes them soft, as does also the use of soap.

TO CLEAN COMBS.

If it can be avoided never wash combs, as the water often makes the teeth split, and the horn, if wet, often becomes rough. A small brush can be bought, made purposely for cleaning combs; with this the comb should be well brushed, and afterwards wiped with a cloth.

BANDOLINE.

Soak starch or Irish moss (whichever is handy) in rose water until dissolved and smooth; if you wish it to be pink, color it with a little pounded cochineal.

OIL OF ROSES FOR THE HAIR.

Attar of roses, one drachm; oil of rosemary, one drachm; olive oil, one quart, mixed together. It may be colored red by steeping a little alkanet root in the oil (with heat) before scenting it.

BIRTH, MARRIAGE AND DEATH STATISTICS

The following interesting table gives a comparative view of the fertility of marriages, the legitimacy and the illegitimacy of births, and the mortality in city and country in the various European States.

COUNTRIES.	CHILDREN TO ONE MARRIAGE		INFANT MORTALITY		ADULT MORTALITY		FERTILITY OF MARRIAGE		ILLEGIT. TO LEGITIMATE BIRTHS.	
	City.	Country.	City.	Country.	City.	Country.	City.	Country.	City.	Country.
France.....	3.16	3.28	*35.69	*28.56	1:31.51	1:42.21	2.03	2.34	*15.13	*4.24
Netherlands.	3.91	4.32	36.25	28.90	1:35.55	1:43.03	2.49	3.07	7.70	2.84
Belgium.....	3.80	4.17	1:34.35	1:44.31	14.59	5.88
Sweden.....	2.99	4.19	38.86	24.50	1:28.95	1:46.86	1.83	3.16	27.44	7.50
Denmark.....	3.04	3.34	29.66	22.68	1:37.41	1:49.77	2.14	2.58	16.45	10.06
Schleswig.....	3.50	3.69	27.42	23.42	1:35.17	1:48.49	2.54	2.83	8.38	6.37
Holstein.....	3.37	3.88	29.92	25.29	1:38.73	1:44.15	2.36	2.90	15.50	8.74
Saxony.....	4.60	4.13	39.88	36.22	1:31.10	1:34.70	2.77	2.64	15.39	14.64
Hanover.....	2.93	3.65	28.70	26.47	1:38.52	1:41.17	2.08	2.68	17.42	9.06
Prussia.....	4.00	4.44	36.02	29.47	1:27.97	1:34.46	2.56	3.13	9.80	6.60

* Per cent.

AVERAGE WEIGHT AND STATURE OF MAN

MALES.			FEMALES.		
Age.	Feet.	Pounds.	Age.	Feet.	Pounds.
1 years.....	1.64	7.06	1 years.....	1.62	6.42
2 years.....	2.60	25.01	2 years.....	2.56	23.53
4 years.....	3.04	31.38	4 years.....	3.00	28.67
6 years.....	3.44	38.80	6 years.....	3.38	35.29
9 years.....	4.00	49.95	9 years.....	3.92	47.10
11 years.....	4.36	49.77	11 years.....	4.26	56.57
13 years.....	4.72	75.81	13 years.....	4.60	72.65
15 years.....	5.07	96.40	15 years.....	4.92	89.04
17 years.....	5.36	116.56	17 years.....	5.10	104.34
18 years.....	5.44	127.59	18 years.....	5.13	112.45
20 years.....	5.49	132.46	20 years.....	5.16	115.30
30 years.....	5.52	140.38	30 years.....	5.18	119.82
40 years.....	5.52	140.52	40 years.....	5.18	121.81
50 years.....	5.49	139.96	50 years.....	5.04	123.86
60 years.....	5.38	136.07	60 years.....	4.97	119.76
70 years.....	5.32	131.27	70 years.....	4.97	113.60
80 years.....	5.29	127.54	80 years.....	4.94	108.80
90 years.....	5.29	127.54	90 years.....	4.94	108.81

GLOSSARY

OF THE

MEDICAL, SCIENTIFIC AND OTHER TERMS EMPLOYED IN THIS WORK.

- Abdomen.* The cavity situated between the lower part of the thorax and the region of the pelvis, containing the intestines, etc.
- Abnormal.* Unhealthy, unnatural.
- Abortion.* Miscarriage.
- Abrasion.* Excoriation.
- Abscess.* Cavity containing pus.
- Absorbents.* The lacteals and lymphatic vessels.
- Absorption.* The act of taking or sucking up.
- Acacia.* Gum Arabic.
- Acetate.* A salt containing acetic acid, united to a base.
- Acetic Acid.* Vinegar.
- Acetic Tincture.* A tincture made with vinegar.
- Aconite.* Monkshood. A native of Europe. This plant is cultivated in gardens as an ornament. It is extensively used as a febrifuge.
- Acme.* Height of disease.
- Adipose.* Fatty.
- Afferent.* Name of lymphatics conveying lymph to the glands; also, nerves which convey impressions to the brain and spinal cord.
- Afflux.* The act of flowing to.
- Ague-chill.* The cold stage of an intermittent.
- Albumen.* A substance found in animals and vegetables, and which constitutes the chief part of the white of eggs.
- Alcohol.* Rectified spirits of wine.
- Aliment.* Any kind of food.

- Alimentary Canal.* The entire passage through which the food passes from the mouth to the anus.
- Alkali.* A substance having a metallic base, which neutralizes acids, as potash, soda, ammonia, etc.
- Aloes.* The inspissated juice of the *Aloe spicata*.
- Alteratives.* Medicines intended to change the morbid action by restoring the healthy functions of the secretions, etc., by a gradual process.
- Alum.* Super-sulphate of alumina and potash.
- Alvine.* Relating to the intestines.
- Ammonia.* Volatile alkali.
- Amenorrhœa.* Absence of the menses.
- Anæmia.* An impoverished state of the blood.
- Analysis.* Resolution of a compound body into its elements.
- Anatomy.* Dissection. Knowledge of the parts of the body.
- Androgyni.* (*Plural.*) A term applied to Hermaphrodites in whom the male characteristics predominate.
- Androgynæ.* (*Plural.*) Those Hermaphrodites in whom the female peculiarities are most apparent.
- Androgynus.* A Male Hermaphrodite.
- Androgyna.* A Female Hermaphrodite.
- Aneurism.* Morbid enlargement of a vessel or vessels.
- Anima Mundi.* Soul of the Universe.
- Antidote.* A medicine given to destroy or counteract a poison.
- Antimony.* A metal used in medicine.
- Anus.* The inferior opening of the rectum.
- Aorta.* The large artery passing from the heart.
- Aphides.* Plant lice.
- Aphis.* A plant louse.
- Areolæ.* The interstices between fibers composing organs.
- Artery.* The name of a blood-vessel which conveys blood from the heart.

- Semen.* The fluid substance ejaculated by the male in the act of copulation.
- Serous.* Watery.
- Sexual Congress.* Coition.
- Spermatic Fluid.* Semen.
- Spermatozoa.* Animalculæ contained in the male semen which impregnate the ova.
- Spermatozoon.* Singular of spermatozoa.
- Stamina.* Substance, strength.
- Sudorific.* Producing perspiration.
- Sudorific Glands.* Sweat Glands.
- Superfætation* Impregnation of a woman already pregnant.
- Tannic Acid.* Astringent property of oak-bark.
- Tartar Emetic.* Tartarized antimony.
- Testes.* Testicles. Organs in the male which correspond with the ovaries in the female. Generative organs.
- Tribades.* Women having abnormal clitorides, or who act toward women as if they were males. A society of women among the ancient Greeks, who indulged in the vice of "Lesbian Love," or unnatural connection with their own sex.
- Ulcer.* A morbid solution of the continuity of the part.
- Umbilical.* Navel.
- Urethra.* Canal or passage to the bladder, through which the urine is evacuated.
- Uterus.* The womb.
- Vagina.* The canal leading to the womb, penetrated by the male organ in the act of copulation or coitus.
- Vascular.* Belonging to vessels.
- Vesicle.* Bladder of water. A sac.
- Viscera.* Entrails.
- Vis Medicatrix.* Vital power of the living body, possessing the power of resisting disease. It also possesses the power of developing organic matter into organized forms.

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