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Know For Thyself.

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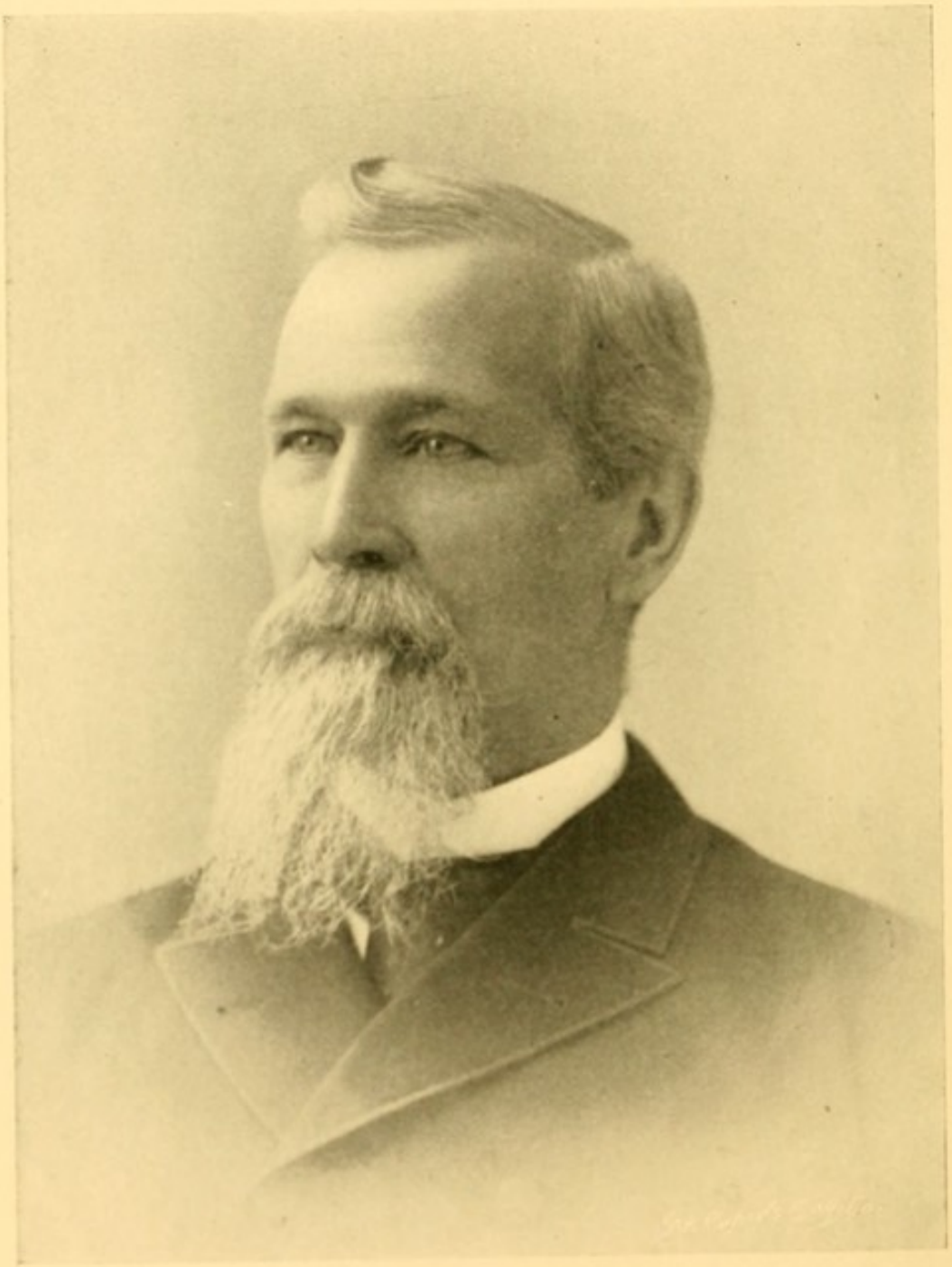

GEO. DUTTON, A. B., M. D.

ETIOPATHY

— OR —

WAY OF LIFE,

BEING AN EXPOSITION OF

ONTOLOGY, PHYSIOLOGY AND THERAPEUTICS.

A Religious Science and a Scientific Religion.

BY

GEO. DUTTON, A. B., M. D.

FOUNDER AND DEAN OF THE AMERICAN HEALTH UNIVERSITY AND DUTTON MEDICAL COLLEGE OF CHICAGO; PROFESSOR OF NATURAL AND SPIRITUAL SCIENCE; AUTHOR OF DUTTON'S ILLUSTRATED ANATOMY, CONSUMPTION AND RHEUMATISM, KEY TO MEDICINE, MEDICAL NOTES, &C.

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PREFACE.

The human body is the most wonderful, the most useful, and the most interesting physical structure ever known to man. It is the earthly paradise of the soul through all successive generations of those who learn and keep the way of the tree of Life. To form the body after a divine model, to preserve it in health, strength, and beauty, and to use it as the "temple of the Living God," is the great privilege of every human being, considered as each must be, an essential unit and component part of the entire human race. Impressed with these great thoughts, and painfully aware that we have all been to some extent wrongly educated and hold erroneous opinions, among which we feel compelled to place many theories now held by different schools of medicine; and believing that the well known law of *cause and effect* governs the human body as it does all else in Nature, and that it may be utilized to establish and maintain a science of life and health that shall eventually harmonize all conflicting schools of medicine, and restore the race to the veritable garden of Eden, we humbly ask the attention and candid and earnest consideration of the reader.

THE AUTHOR.

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Biographical Sketch of the Author.

The readers of a book become more or less personally interested in the author. They desire to know something of his life; and will sometimes remember and cherish his thoughts from personal acquaintance. They can also better judge of his claims to authorship by some knowledge of his life, that will enable them to assign him "a local habitation and a name."

The author of these pages was born in Royalton, Windsor County, Vt., March 25, 1830. He is the tenth child and fourth son of John G. Dutton and Abigail Morrill. There are few incidents of his youth of sufficient interest to his readers to be mentioned here. He was fond of books at an early age and generally won the approbation of his teachers. He remembers reciting Peter Parley's Geography entire, at two recitations, on the last day of a term of school when he was only eight years of age. His sister Mary, afterwards preceptress of the High School at Rutland, Vt., formed with her brother the entire class. He does not mention this as evidence of precocity, to which he lays no claim, but, thanks to the industrious and frugal habits of his parents, he had a tenacious memory. For the benefit of those who believe in dreams and signs, two other incidents of his childhood are here truthfully related. He dreamed one night of finding a hen's nest at the barn with seventeen eggs. Relating his dream in the morning, he told his sister Mary, next older than himself, that if she would go with him they would bring up the eggs. The other members of the family, twelve children in all, did not share his confi-

dence in his dream. Nothing daunted by their doubts, and guided only by his dream, he soon returned triumphant with sixteen of the eggs, leaving one for a nest egg. The other incident occurred one dark evening as he was returning alone from a neighbor's, Mr. Bradford Cleveland's. Passing by a watering trough near a wet piece of land, a light, resembling a candle-blaze, rested in his hand, but did not burn it. He walked along to the trough and dipping his hand in the water the light disappeared. Whether it was an exhalation from the marshy ground he never could fully determine. The great aspiration of his youth was to become a teacher, which he did, and for many years with a good measure of success, teaching his first school in "North Lympus" (town of Bethel, Vt.), in 1848-9; at the "Old Church" neighborhood (Bethel), in 1849-50; the village school of Lisbon, N. H., in 1850-51; in Shirley, Mass., in 1851-2; "Bethel Gilead" (Bethel, Vt.), in 1852-3; Rochester, Vt., in 1853-4; Beverly, Mass., in 1854-5; was principal of "Orange County Grammar School" (Randolph Center, Vt.), in 1855 to 1857; of "West Randolph Academy" (West Randolph, Vt.), 1857 to 1859; was superintendent of public schools one year in Randolph, and two years in Rutland, Vt.; was Master of a graded school in South Danvers, Mass., (now called Peabody), one year; and again principal of West Randolph Academy for three years in 1869-1872, so that he trusts that he has been a bearer of light, in some degree to many. While living at Bethel Gilead, and in his "teens," he left home one night, while his folks supposed him to be in bed, to attend a dancing party at a neighbor's. He enjoyed the entertainment tolerably well, not, however, quite satisfied with the manner of leaving home, till during the small hours of the morning, when he heard his given name, "George," distinctly called, and immediately returned to his

home and crept softly to bed. He had not been long there before he was called up by his brother-in-law, Mr. John McIntosh, to rise and tend the kiln for drying hops. Thus by obeying his premonition he escaped immediate detection of his clandestine withdrawal. He never repeated the operation. He *fitted for college,* chiefly at West Randolph, Vt., under the instruction of Mr. Austin E. Adams, but was one term at the Methodist School at Newbury, Vt., then in charge of Rev. Joseph E. King. During all this time he paid his own expenses by teaching common schools and penmanship during the winter, and working at haying in the summer. After a regular four years' course of study at "Dartmouth College," he received his diploma with the title of A. B., in 1855. His sister, Lucinda, and her husband, Milo Dearing, assisted him while in college by loans of money, and afterwards again, while pursuing his professional studies; and for their substantial aid, unceasing kindness and fraternal regard, during many years, he here makes this public acknowledgment of the fact and of his constantly increasing gratitude. He needs not the gold ring which his sister placed upon his finger and requested him to wear, to keep alive in his breast the memory of his benefactors. Three years from college spent as principal of the academy where he himself fitted for college, brought him to the door of his professional studies. These he pursued for three years under the tuition of Dr. J. M. Woodworth of Bethel and Professor Joseph E. Perkins of Castleton, Vt.; attended three courses of medical lectures at Burlington, Vt., Hanover, N. H., and Washington, D. C., where he took his degree of M. D., in the spring of 1861, just as the flames of civil war were sending their lurid glare over his native land, and opening a way for the oppressed as of old, through the red sea of fratricidal blood. Thus the history of the world

repeats itself, as the nations forget the lessons of the past. During the civil war he practiced his profession at Rutland, Vt., but his brother John, like thousands of other Green Mountain boys, yielded his life in the strife. On one occasion, while acting as examining surgeon for volunteers, which the towns were very anxious to procure in order to avoid, if possible, a draft, a man was presented for examination by the select men who was at the time under the influence of intoxicating liquors. The surgeon's duty was plain and the intoxicated man was rejected, with the remark that if he wished to go to war he might apply again the next day. He did not return and the select men of the town lost both the volunteer and the whisky, which brought his will to the sticking point. This was not all. The examining surgeon, who discharged his manifest duty, lost his position, and the public officers of the town lost the confidence of the examining surgeon. So much for a glass of whisky. Well, the draft came; then many applied for certificates of exemption. These required the signatures of two regular physicians. The author one day sent an applicant with his certificate of exemption, on account of a cataract of the eye, to a brother physician for his signature. The physician signed it, and the next day sent an applicant to the author with a certificate granted for the same reason, viz., cataract. But the applicant had no cataract, and was dismissed without obtaining the desired signature. Of course, it would not do to impugn the motives of a brother physician, and whether he knew a cataract of the eye is still a matter of doubt.

While practicing at Rutland, Dr. Dutton procured a Parisian model of the human system, oil paintings, charts, etc., and prepared himself for giving public lectures on Physiology and Hygiene, believing he could be much more

useful to the people in teaching them how to avoid disease than to spend his life in the ordinary routine of his profession. Accordingly, for three years, he traveled and lectured in many cities and towns of Vermont, Massachusetts, New Hampshire, New York and other places. In 1869 he established a school in connection with the academy at West Randolph, Vt., for the purpose of giving instruction in the art of preserving health and in the general principles of Medical Science; but after continuing it for two years moved to Boston, Mass. (1872), gave some public lectures at Temple Hall, and opened an office and school of instruction at 69 Essex street, in the heart of the Athens of America. How his time has been spent since remains to be told.

INTRODUCTION.

"So God created man in his own image." Gen. 1, 27.

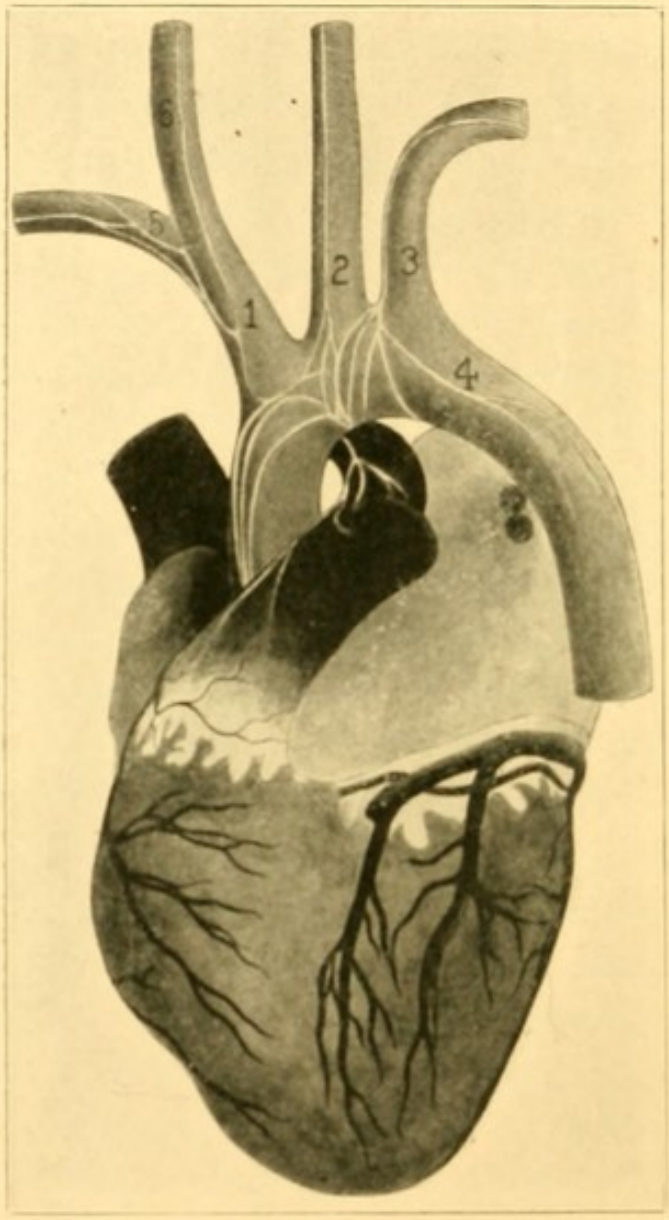
"And the Lord God planted a garden eastward in Eden," "and the Lord God took the man and put him into the garden of Eden, to dress it, and to keep it." Gen. 2, 8 and 15.

An image is a likeness or resemblance. In what sense, then, can man be said to be the image of God? Surely not as a material being, for God is in no sense material, and cannot be recognized by any outward sense. God is Spirit, and man can resemble his Creator only as a mental and spiritual being. Man has, in finite degree, the same attributes, the same mental and spiritual powers and faculties that God, or Spirit has in perfection. Thus *mentally and spiritually* man bears the image of God. As a spiritual being man has been placed in the Garden of Eden "to dress it, and to keep it." Now we shall attempt to show that the human heart is the Eden of Scripture, and the human body the garden of Eden. Our reasons in brief are the following:

It is admitted by the best authorities that no spot answering to the garden of Eden, as described in the Bible, has ever been found upon the earth; and it is evident to all that the human body when in health, and especially the heart, which is often called the seat of the affections, is pre-eminently a "place of delight." Now, we read in Gen. 2, 10, that "a river went out of Eden to water the garden, and from thence it was parted and became into four heads." This is very remarkable language. No ordinary river ever runs up stream. Only in the human body can anything be found to which this remarkable language can be made to apply. Now, mark the application. The *arterial* blood which, as a full stream, leaves the left side of the heart nour-

THE HUMAN HEART.

THE EDEN OF SCRIPTURE.



EXPLANATION.

Fig. 1. The Innominate Artery.
Fig. 2. The Left Common Carotid.
Fig. 3. The Left Subclavian.
Fig. 4. The Descending Aorta.
Fig. 5. The Right Subclavian.
Fig. 6. The Right Common Carotid.

ishes the entire body; or in other words, "waters the garden." This river of life (the arterial blood) flows out from the heart (Eden) in a vessel known to anatomists as the *aorta,* which takes its name from the fact that it *arises* from the heart (Eden). It is the common trunk of all the arteries of the body. Through it the arterial blood starts out from the heart as *"a river."* Just above the heart the aorta forms an arch, or bow, where it gives off three large branches, or arterial trunks, that supply the head and upper extremities; and, itself, the *fourth* branch, then turns downward to supply the lower parts of the body and the lower limbs. The anatomical names of these four branches or vital streams that nourish the body are:

1. The Innominate (Bible name, *Pison*).
2. The left Common Carotid (Bible name, *Gihon).*
3. The left Subclavian (Bible name, *Hiddekel*).
4. The descending Aorta (Bible name, *Euphrates*).

Now mark the further analogy.

The *first* (Hebrew, *ehhadh*) branch is the Innominate, which is the common trunk of the right Subclavian and right common carotid arteries that together supply the right arm and right side of the head.

Ehhadh (first) signifies "joined together as one;" and in the innominate artery (the first branch of the aorta after it leaves the heart) is joined the blood which flows through the right subclavian and right common carotid arteries that supply nutrient blood to the right upper extremity and right side of the head and brain. This first head (Pison) "compasseth the whole land of Havilah, where there is gold; and the gold of that land is good; there is bdellium and the onyx stone." Gen. 2, 11 and 12. Gold is considered a precious metal, and bdellium and onyx are precious stones.

These are found in the land of Havilah (the right arm, brain, and head) that is fed by Pison (the innominate artery). Now mark the application. Havilah signifies to "bring forth, to feel pain, to create, form, supply strength," which meanings vividly portray the offices of the brain, right arm and hand, which are well represented by gold and precious stones. "The name of the second river is Gihon." Gen. 2, 13. Gihon signifies to "well out, or burst forth into instant activity" (into thought), and applies to the second great artery at the arch of the aorta (the left common carotid) that feeds the left side of the head and brain, and through the "circle of Willis" can supply also the right side of the brain. It thus supplies power for thought.

Hiddekel signifies *"active," constantly moving.* It supplies the left upper extremity—the left hand; which also typifies industry.

The fourth river is Euphrates. It is also called the "great river." (See Deut. 1, 7, and Josh., 1, 4.)

Now, *fourth* (Hebrew, Rebhii) denotes "generation, to increase, or the Creative Power." This branch, or great river, the descending aorta, supplies the *lungs,* the *organs of generation,* the lower extremities, and most of the organs of the chest and abdomen. If other proof is wanting that the body is the garden of Eden we have it in the signification of the Hebrew, *nahta* (to plant). It implies *"to fix upright, to make erect,"* like the body of man. The garden (the human body) was *planted* when man as a race was made to walk erect. No Hebrew scholar who understands anatomy, or even the circulation of the blood, can fail to see the close analogy, when once pointed out, between the arterial circulation and the river that went out of Eden to water the garden. But the analogy may be traced still farther. The body is the place where not only woman—the

mother of the race—but man also is tempted through the senses. The forbidden fruit is *self-will* that is set up in opposition to the divine will.

Thus we learn from this beautiful allegory that it is the duty of man, as a gardener, to take the most perfect care of his body that it may administer fully to his needs and delight. In the midst of the garden (i. e., interiorly) was the tree of life (the soul), and also the tree of knowledge of good and evil. The tree of knowledge is the *human intellect* which gathers and bears the fruit of good and evil alike; since children learn what we call evil almost as readily as that which we call good. Riper judgment and more perfect guidance will enable us to reject the forbidden fruit.

Vision of Life.

A POEM.

A vision of life and of Eden fair,
Of the tree of knowledge that flourished there,
Of the good and ill that sprung from thence,
Is given to solve the world's suspense,

Why man was ever allowed to sin?
Why pain and death should come to him?
Why Infinite Wisdom, Love and Power
Should sickness grant for mortal dower?

If God is good, as men declare,
And man is His own child and heir,
How can it be that man was lost,
And ransomed at such fearful cost?

The vision shows that life to man
Means more to him than one short span
Of earthly toil, of woe and sin,
And more than sense reveals to him.

The Life is perfect, but the human sense
Is finite, and the thought intense;
The Life belongs to one great Mind,
And sense is perfect of its kind.

The One Supreme, high over all,
Does not ignore the sparrow's fall;
He gives man *power* of choice while here,
That he may rule* in higher sphere.

Had man been made complete at first,
And no power given to drown, or thirst,
Had he been made all wise and true,
The world to him had not been new,

Had he been made all free from sin,
No power of choice could come to him,
No learning be to him delight,
No prize entice, no work requite.

But power to err, and choice to make,
Does not from man his privilege take
To choose the right, the wrong to shun,
That good may ever to all be done.

The Way of Life is like the sight,**
That changes darkness into light,
And makes all sickness, pain and death
Flee from us like the parting breath.

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*When duly unfolded and qualified.
**Sense of vision.

The conscience is man's guiding star
To truth and right as seen from far,*
But *absolute* truth and right is known
By fruit** it brings in *every* zone.

The Way of Life leads up to Him,
The Ideal realm that knows no sin;
The Way of Life gives endless joy
To all who thus their time employ.

The Way of Life, like hidden path,
Must be discovered by true faith,
Which is the evidence within,
The substance of all things unseen.

True faith is *understanding*, clear,
That shows the way where many fear;
True faith and knowledge never part,
One leads the mind, and one the heart.

Let, then, truth faith and knowledge be
To thee, dear friend, the remedy
For every ill of soul and sense,
And life divine thy recompense.

For centuries the hope of finding lost health has been placed in drugs (falsely called remedies) and for centuries this *ignis fatuus* has led successive generations down to premature death. *Now*, the clarion voice of truth demands a change, a new science and a new religion. To secure this change is not so difficult as it might seem. We need only to *see clearly*, each for himself, that *our own personal interest*

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*The relative right.
**The greatest good of all.

is bound up inseparably with the interest of all. The real unity of the race, once understood, is the key to the whole situation. We never purposely injure ourselves. We seek, naturally, for *ourselves*, health, physical perfection, long life, and happiness; and when we learn that every human being is really and truly a part of what we call *self* (not physically considered, but mentally and spiritually); and that every joy and sorrow is essentially our own, we shall then work most faithfully for the good of all, and in so doing work most effectually and truly for ourselves. What, then, is that which we call self? It is represented by the personal pronoun, I; by the Latin word Ego; it is that which under all circumstances maintains its own identity. Reader, did you ever think what this identity of self really is?

In *human* language, which is always more or less imperfect, and in a *finite* and *material* sense, the I, or Ego, generally refers to one individual person, a *human* being, which, though subject to incessant change in body and in mind, is said to be ever the same individual; but in an *absolute*, scientific, or philosophic sense the I, or Ego, the me, the *real* self, when known as it is, can be known only by understanding the spiritual relation which the finite bears to the Infinite, the human to the Divine. The *real* self is the perfected Soul; the image of God; the spiritual essence of all Being. In the Greek language the I (Iota) is the smallest letter of the alphabet; but in scientific and philosophic language, in Ontology, the *real* I, the true self, is the unchangeable *I am;* the very Essence of all things. As human, finite beings we bear the same relation to the Infinite that a wave of the sea bears to the ocean, or a hillock to the planet on which we live. Take away the ocean and the wave has ceased to be; the planet and the hill has gone. Spiritually all are one. Really *there are not two spirits*, nor any greater number, but

One only. This science itself declares. The unity of design everywhere manifested in nature gives ample evidence of *one* creative mind. Spiritually, one universal law governs in every quarter of the globe; and throughout the spheres. This law, in the outer world, is called the law of Nature, and so far as understood it always commands respect and obedience. Universal and natural law will be better understood, perhaps, if we call it the unchangeable Will of the one Supreme Mind of the universe. It leads always, when properly understood, to victory for the right; to peace, health, perfection, beauty and happiness. To know this law is the birthright of every individual.

Let us, then, remember that the law of our being, properly understood, is the Divine Will; and to work in harmony with the Divine Will is to succeed, and realize all that is highest and best. Natural law, and spiritual law, are not diverse and contradictory, but they are ever harmonious, and work in unison. Both are the will of the One Supreme and beneficent Mind of the universe; one is the law of nature, the Divine Will as manifested in *material* things; the other, spiritual law, is the manifestation of the same Will in *mental and spiritual* things. The perfect knowledge of this Universal Will, as manifested in nature *and* in mind, is a knowledge of universal science, and it leads every honest inquirer and diligent student, sooner or later, to the full recognition of every attribute of Deity. Science is the knowledge of correct methods; the path to success; the divine way; the modus operandi of Deity; the method by which all things in Nature are done; an understanding of the relations of cause and effect. Science, properly so-called, never leads to failure. It has but one answer—Truth, Success, the absolute Right. Such is Science. Now, what is scientific religion? The etymology of the word makes it signify "Reunion." In

true science, and in fact, there are not, as supposed, many religions, but one only. There can be no such thing as *creed* in science. We either *know* science or we do *not* know. If we do not know we must study and search till we *do*. Now, *reunion* implies that things originally united became in some way separated, or they could never be *re*united. For a very beneficent purpose—that man may have the life-long pleasure of *acquiring* knowledge—he is born in ignorance. In his infancy he knows nothing of the attributes of the Divine Being or of science. He is *by ignorance separated*, as it seems to man, from all knowledge of Infinite Wisdom, Science and Love. As, however, he comes to the study of Nature, if studied aright, he is led to the conception of a power infinitely stronger than the arm of man; of wisdom vastly superior to that of any human mind, and lastly, either through the study of nature's works in connection with the natural powers or faculties of the mind, or by a more or less direct revelation, inspiration, or intuition, he comes sooner or later to recognize the hand that is Divine. He is then *reunited* to God, the Creator, whose image he bears. This reunion is religion. He was never *absolutely* separated from God and cannot be, but only to *human* conceptions was he ever separated. He is *reunited* when he *consciously* recognizes the fact, that he is made in the image of God. This he cannot know or experience till he beholds, through mental and spiritual perception, the attributes of the Great Original in whose image he is created; and he can best learn to know the Original by studying the image, viz., himself. Science, properly understood, is the handmaid of religion, for she leads all her faithful followers back to the Fountain of Wisdom, Knowledge and Power. The Supreme Mind of the universe has been reviled, not because of His real nature, but because of the misconceptions and

false doctrines of teachers who have taught a false science. *True* science leads only to the best results, to complete success. Now, judging by this infallible standard of true science, viz., Success, what must we think of modern medicine, whose chief reliance is upon material agents, drugs, poisons, and the surgeon's knife? It certainly does not bring the best results. It is undoubtedly safe to say that the mortality caused by these *erroneous methods* of medical practice for the last thousand years far exceeds the mortality of all persons killed in battle during the same period. To offer to patients health, strength, longevity and beauty by the use of drugs or poisons, though called by the euphonious name of medicines, is to offer to annul the very laws of nature. It cannot be. Health, strength, longevity and beauty are the result only of glad obedience to the will of the one Supreme Mind that knows no shadow of turning. That Will is made manifest in Nature to all those who diligently seek to know it. It is not malevolent, as some have supposed, but wholly benevolent. As applied to health and longevity the will of the Supreme Mind is known to philosophers as the law of our being. It is so beneficent that he who *really knows* and understands always obeys. To teach true religious science is the grand cure. Cause and effect are always intimately related. Remove the cause, the effect ceases. Disease is an effect; and is always the result of erroneous *un*scientific methods of living and acting; while health is the result, not of the use of drugs, but of correct methods of living. Right methods always produce right results; erroneous methods, failures. The drug system of medical practice therefore stands condemned by its results. The true method of practice is not to antagonize, obscure or destroy symptoms of disease, for which purpose drugs are now largely used; nor to attempt to promote

or increase the symptoms of disease by some appreciable or inappreciable exhibition of drugs; nor by removing or maiming parts of the body that might be saved intact; nor to create any artificial disease on the baseless assumption that the preservation of health will be secured by the use, to any extent or degree, of infectious matter that all desire to avoid as by instinct; but to find and remove the cause of disease, both near and remote. Knowledge of the way of life and of right conditions is the first step towards perfect health for each and all, and the application of such knowledge is the only true remedy for disease.

Perfect physical life is the ideal state of existence—a veritable earthly Paradise. This was our state of physical being *as a race* while yet governed purely by instinct, before the front brain was sufficiently developed for man to devise new and erroneous methods of living, and set up, as a standard, his own imperfect self-will in opposition to the perfect or divine will. Perfect obedience to natural and divine law makes the physical body a place of delight—a garden of Eden—but self-will often leads man to taste of the still forbidden fruit, viz., knowledge of *evil*. The *tree of knowledge* is for all, but its fruit is both good and evil, humanly speaking, till we learn to discriminate and partake *only* of the good. The *roots* of the tree of knowledge extend to the lowest depths of human nature, while its *topmost branches* reach into the highest realm of the kingdom of God, but there the knowledge of man becomes recognized as the knowledge of Deity; and the identity of man becomes consciously one with the Infinite Mind; which is to say, *not* that *our* identity or consciousness will cease to be, but, like a drop of water in the ocean, our life will become a conscious part of the Infinite Life.

Evil is only perverted or *lower* good. It is the absence

of good. It is traveling in the wrong direction; *from* and not *towards* success and happiness. *Absolute* evil does not grow on the tree of knowledge, for the tree of knowledge is only a branch of the tree of Life. *There* all is good; but, *as a physical being,* the *ideal* man was born in the lowest depths of the earth, even lower than what is now called protoplasm. Every step in the formation of the earth itself was a step in the upbuilding of the perfect man, who was *spiritually and ideally* with the Author of all being before ever the earth was.

In the allegory of the garden of Eden we are told that there was in the midst of the garden (the body, or physical nature of man) the tree of knowledge of good and evil—or a consciousness of the two extremes, or diverse results of human activities; one extreme bringing success, the other failure. Man might wisely *know* or experience the fruit of good, but *not* of evil; and it is as true to-day as ever that partaking of knowledge of evil on the physical plane of being brings sickness and premature death. Pain, sickness, and premature death are always the result of mental errors that bear fruit on the *physical* plane of being. They are the shadows of life which fall upon man and *cannot* be removed so long as opaque substances *(erroneous* ideas) intervene between his *own understanding* and the light of Truth. We cannot safely leave to another that personal knowledge which is of vital importance to ourselves. Our bodies are locomotives; we ourselves are engineers, and each largely of his own body; therefore each must know for himself the nature of the engine (his body, or instrument of the soul) and how to control it on all kinds of track, or wherever it goes.

We naturally imbibe the habits and tendencies of our parents and ancestors, and the same habits and customs that

produced sickness in them will produce it also in us; and this tendency to follow erroneous habits of ancestors we call heredity. Heredity is, therefore, really no excuse for us as children farther than we may find in the fact that we were erroneously taught; but it will be a disgrace to us as parents if our children do no better than we have done. Heredity should strike forward and not backward. The law of heredity is really intended in the *beneficent* plan of the universe, which is everywhere apparent to the philosopher, as a strong and additional inducement to correct methods of living *for the sake of those who may come after us.* Now, there are manifestly, at least, *three planes of being* (many reckon seven)—the spiritual, or celestial; the psychic, or moral; and the natural, or physical. We know that sin and sickness are related as cause and effect. But who has sinned? Whence the cause? We cannot charge the Author and Ruler of all things with sin, error or folly; nor can we charge our material body with error. Material things have no moral accountability. It is not the *perfect spirit* which endows man with his marvelous intellectual power, nor yet is it the *insensate,* physical *body* that is responsible for unsatisfactory and painful conditions of life. It is the *soul* of each person, combined with the souls of all those who help to make up his environment, that determines what shall be the state or condition of the physical body of each person. The soul (or mind) is the gardener, the moral agent, and it is therefore the soul or mind of the patient, or of his attendant that we must address and reach for the removal of unfavorable conditions. So far as disease can be eradicated; or, in other words, *when* disease is eradicated from the face of the earth, it must and will be done, not by the use of the Dispensatory, or any other *Materia* Medica, but by diffusing a knowledge of the unity of the race, the suf-

ficiency of spirit, the higher energy, and of the nature and requirements of the soul that shall enable it to build and sustain a perfect body. The way of life, which is easily learned, if not purposely or otherwise obscured or concealed by false teachers, must be learned not by the few, as a class, but by all; and not as it applies to the conscience and moral nature alone, but as it applies to the perfection of the physical body as well. The human soul can no more build a perfect body without understanding, in general terms, the structure, function and requirements of the more important parts of the body than the architect can build a temple without a foundation. The intelligent co-operation of the individual, not with erring man merely, but with the divine impulse, is all important; for man can make or mar the beauty, not of the ideal, but of the expression or outward manifestation of the perfect man. The body is material—a part of nature herself, and "Nature is but a name for an *effect* whose cause is God." Through the study of Nature (the mechanism of the universe), and especially of the human body *in connection* with the soul, or mind, shall we learn the perfect law that guides ever unerringly to health and happiness. "Nature," says Huxley, "is the expression of a definite order with which nothing interferes; and the *chief business of mankind* is to learn that order and govern themselves accordingly." To follow nature, to live according to physiological law, and to obey God is one and the same thing. There is no other way to health, success and happiness. "Nature never did betray the heart that loved her; 'tis her privilege through all the years of this our life to lead from joy to joy; for she can so inform the mind that is within us, so impress with quietness and beauty, and so feed with lofty thoughts that neither evil tongues, rash judgments, nor the sneers of selfish men, nor greetings

where no kindness is, nor all the dreary intercourse of daily life shall e'er prevail against us, or disturb our cheerful faith, that all that we behold is full of blessings."

The art of healing is of divine origin. It is in its nature benevolent and Godlike. In Grecian and Roman mythology its origin is ascribed to Apollo, the god of music and poetry. Apollo was the son of Jupiter; Jupiter the offspring of Time (the Greek "Chronos"), and Time was the offspring of Heaven. As an *ideal science* Medicine is of celestial birth; but as an occult art it is a craft, a means of livelihood for those who practice it. As an *ideal science* medicine tends to save health and prolong life; but as an *occult art* and a craft, medicine tends to destroy health and shorten human life. This will appear more and more evident to those who study it. Hoping to be instrumental in establishing a better system of medical practice we ask attention to the following:

PRINCIPLES OF ETIOPATHY.

Etiopathy is a new name for a new mode of medical practice. It is the Science of Healing, based on the immutable law of cause and effect. Its *law of cure,* written in the language of what was once called the Eternal City, is *Causa remota res cessat.*

[This law of cure, which is a cardinal principal of Etiopathy, is read and pronounced as though written, Cauzah remotah reze sessat. It makes a sentence of eight syllables, and is the banner motto of the new practice. It reads when literally rendered into English, *The cause removed the effect ceases.*]

This law is predicated on the fact that disease is an effect. No one will probably deny this fact who is acquainted with natural philosophy. If denied it is easily proved. For example take the following: Severe pressure applied to a sensitive nerve always produces pain, and pain is disease. The undue pressure upon the nerve and the pain following stand plainly in the relation of cause and effect.

That disease is *always* the effect of some cause, rests upon the axiom, "There is no effect without a cause." It is equally true and equally evident that so long as the cause remains in operation the effect will not cease, and that when the cause *is removed* the effect *will,* sooner or later, cease, and that as soon as the laws of nature allow. From this it is evident that the true practice of medicine consists in finding and removing the primal (or mental) cause of disease; and the primal cause of disease is not generally hard to find. It is a lack of *understanding and applying the laws of our being.* The task is to find, proclaim, and make known the

science and logic of Being. The work is purely educational; hence our second cardinal principle is, *Do away with* all false theories, and *all secrecy in medicine.* Make medicine, as the art of healing, *a popular study,* and no longer an occult art as it now is. The reasons for this are more fully set forth in the body of this work.

All science rests on the immutability of the laws of nature. The FACE of nature changes continually, but the *laws* of nature never. There is no such thing as chance. The use of the term chance serves only as an excuse for our ignorance of the real cause; for without a cause there is no effect. Disease is an effect. It does not come by chance. Remove the cause, and sooner or later the effect ceases. If these propositions are true, then it follows that the whole science of Medicine consists in finding and removing the real or primal cause of disease. *Etiopathy* is therefore the only true method of practice. Etiopathy differs from ordinary medical practice in several important particulars, viz.:

1. It holds that the primal and real cause of disease is *not* microbes, or any *material* agent or thing, but is always a lack of mental and spiritual unfoldment.

2. The essential remedies for disease are *not* drugs, or *so-called* (but generally *mis*-called) "medicines" that are of a material nature, but kind words, loving thoughts, mental illumination, rectified conditions of life, both mental and physical, knowledge and understanding.

3. It considers every man, woman and child as a patient or pupil until properly instructed in the way of life, or art of living.

4. It rejects vaccination, vivisection, tuberculin, antitoxin, the germ theory lately put forth as the cause of disease, and, as a rule, rejects all poisonous drugs in the treatment of disease.

5. Immunity from disease is *not* secured by poisoning the blood with the virus of any diseased animal, but by *living on a plane of being above disease;* therefore, we have the following:

Basic Principles of Etiopathy.

1. Universal education in medical and sanitary science; not as usually taught to-day, but as it can be demonstrated, thus doing away with all secret medication. In other words, to make doctors *teachers,* as they were originally.

2. The recognition of the soul as the motor power of the body.

3. Basing the practice of medicine on logic and demonstration, and no longer on fallible human authority.

4. That *ideas* are safer, surer and better remedies than drugs.

5. That health and disease are both governed by the same laws, and that conditions for preserving health, rationally applied, are the best conditions for the recovery of the sick.

6. That the search with the microscope for the cause of disease is utterly futile. The cause is error in living, and errors cannot be seen with the microscope.

7. That contagion is impossible to such persons as are fortified with pure blood and sound health.

8. That the study of health is far more profitable than the study of disease.

9. That the science and art of healing is vastly simple as compared with the curriculum of medical colleges to-day.

10. That to learn the science and art of living is vastly

better than to trust to the art of the pharmacist, or, in other words, prevention is better than cure.

11. The science of Etiopathy removes all known causes of disease, so far as is possible, to remove them, makes all changeable conditions favorable as possible for the healing power, then trusts implicitly to the ever living and universal Spirit to effect the cure. It is the science of cause and effect.*

12. The true law of cure is *"Causa remota res cessat"*—Remove the cause, the effect ceases.

13. That all physical effects in the body can be traced to their invisible causes either in the mind or soul of the patient or of others.

14. That we must make a clear distinction between poisons and medicines.

Etiopathy is really the fruit of forty years earnest and devoted study by the author in the search for Truth in Medicine. In its formative stages Etiopathy was called the Ideal System on account of substituting *ideas* for drugs; and later, the Didactic (teaching) System, because the proper office of the doctor is *teaching*; but since the law of *cause and effect* is the chain that connects all material, or natural phenomena, with the primal and ultimate cause of all action, and explains even the phenomena of life, when understood, we have formed a word from the classic Greek that calls attention directly to the *cause* of the conditions that we desire to correct, viz., the physical condition of the body and the mental condition of the mind. Etiopathy is composed of two

*This definition of Etiopathy—which is a new branch of science devised by the author—was written at 52 Dearborn St., Chicago, at high noon, Sunday, Feb. 5, 1899, when the heavens were clear and the sun shining brightly; and this date is here recorded as the birthday of Etiopathy.

Greek words that signify, respectively, *cause* and *suffering*. It implies that we never suffer without cause, and shall cease to suffer only when we have removed the cause or temporarily broken the chain that connects cause and effect. Remove the cause, the effect ceases.

Etiopathy is the missing link that unites Physics and Metaphysics in one harmonious whole. It is that branch of universal science (Ontology) that relates to the recovery of health by the removal of all causes that prevent recovery. This new practice draws a sharp line of demarcation between a material agent that is *beneficial* to the sick, and one that is injurious or deadly. The former is properly called a medicine or remedy, the latter a poison. At the time of this writing these two things, medicine and poison, are strangely confounded, both by the profession and by the laity. It is important that we recognize the distinction.

Disease is not the hydra-headed monster it has been represented.

Disease does not naturally tend to destroy life, as most people think; on the contrary, disease tends to preserve life by calling attention to conditions that need correcting. It is not disease that kills, but drugs, drug doctors, surgeons, and wrong conditions. If pain or disease was *not* the result or effect of bodily injury, there would be nothing to prevent bodily injury. So long as man has power of choice between what is relatively called good and evil, right and wrong, true and false, some *motive* is necessary to lead him away from the evil, the wrong, and the false, towards the good, the right, and the true. We seek the light because it is light and not darkness.

We cannot drive darkness from us because it is not an entity, but we can bring in the light and the darkness disap-

pears. We cannot drive the clouds away, but on lofty mountains we may get above them. So of disease, we cannot drive it from us, but understanding will cause it to disappear. We may get above it. Let the beauties of Nature and love of all fill the mind. Trust not belief. It has a lie at its heart, thus, be-lie-f. If on investigation it proves to be not a false belief, then we may conclude that its final letter stands for a *fact*. It is no longer belief, but understanding.

Etiopathy, intelligently applied, would doubtless save half a million lives every year in the United States alone; until the average length of human life became 100 years. It would save in doctors' bills $100,000,000 annually in the United States; in time lost by sickness $100,000,000; and in expenses for drugs and nursing $100,000,000 more, making a saving of $300,000,000 and 500,000 lives annually by a proper health education and a true system of treating the sick. We keep our physical and mental faculties only by using them, and using them wisely; we lose them by misuse or by long neglect. Again, we lose our faculties by long protracted over-use. These facts have been observed in thousands of instances. They are the law of our inheritance. In benefiting others we benefit ourselves; and in benefiting all we become Godlike.

Etiopathy presents the following advantages, viz.:

1. There will be no expense for attendance of physicians because every person will become a physician for himself and family.

2. The expense for what is now called "medicine" will be almost nothing, because *understanding of natural and divine law* will be recognized as the chief panacea.

3. There will be little or no sickness, pain, or loss of time,

because the public mind will be enlightened in regard to the care and preservation of the body.

4. The average period of human life will be doubled, and the joys of living increased.

5. By reason of better health and longer life of the people the deserts and waste places of the earth will be reclaimed and made to blossom as the rose.

6. Man will eventually become holy, healthy and happy and his body a fit temple for the indwelling Spirit.

Remember the following definition:

Etiopathy is an exposition of the law of *cause and effect* in the realm of health and healing (i. e., in the realm of Medicine).

General Considerations.

Man, health, disease, doctor and *medicine* are very common and familiar words. What these words really *mean* is quite another question and one that our readers may find, as we hope, interesting and profitable. It is not, perhaps, too much to say that the lives and well-being of millions of people depend upon their understanding these five simple words. Persons of sound mind and large possessions rarely trust their entire wealth or property in the hands of another; but every time a patient takes a dose of what is now called "medicine" without knowing its nature for himself, he trusts another with what is far more valuable to him than all earthly possessions, viz., his life and health. But the case becomes even worse than this when we come to learn, as we *must* sooner or later, that the person prescribing drugs does not himself know (speaking in general terms) the real nature of "medicines" as usually administered, nor yet the

true nature, cause and cure of the disease of the patient for whom he prescribes; some mechanical injuries, possibly, alone excepted. A *medicine* is, properly, something necessary or *beneficial* in the treatment of the sick; and yet many so-called, but *falsely* so-called medicines, are *neither* necessary *nor* beneficial, but positively injurious, and many times actually poisonous, as when strychnine is given as a tonic. We might adduce many other instances, yes, *very* many, where deadly poisons, whose real nature is to kill are daily exhibited or prescribed as valuable (?) "medicines." For this and other reasons it is undoubtedly true that disease as a whole would be *less fatal* if no drug or surgeon's knife was ever allowed, and sole reliance was placed upon public instruction in regard to health. It is true that Hygiene is one of the branches pursued in medical colleges, but it is not made prominent, probably for the reason that Hygiene and medical practice, as medicine is now taught, are diametrically opposed to each other. To practice Hygiene is to *preserve* health and *prevent* disease, which, if successful, makes all other practice unnecessary; for when all are kept in good health there are no patients to be cured; and so it comes about that ordinary physicians consider it to be their duty, *not* to prevent disease, but to *cure* disease, and with this idea they ignorantly or otherwise not only *allow* disease by neglecting the means (public instruction) necessary to preserve the public health, but actually cause disease and death by the use of poisonous drugs, vivisection, vaccination and unnecessary surgical operations. The people are already weary of the present methods of the many various and conflicting schools of medicine, and are anxiously looking for something better. They want knowledge of themselves, and such knowledge is their birthright. Even Hygiene, *as taught to-day*, will not satisfy, for it is, in part, at least, not

a presentation of natural or divine law, but a code of *man-made rules*; and it is not the province of man *to make law,* ever, but only to find out and declare the laws of nature or of God. *True Science,* which we may properly call Ontology (Science of Being), is the knowledge of the law of the universe, which rules on all planes of being, in all places, and at all times. It is the way of life, and leads undeviatingly to universal health and happiness.

As to what constitutes true science, it is the high privilege of each person to judge for himself, and in all matters of our own personal health we have evidently a *supreme right* to *know* each for himself. Without an understanding of this subject any person is liable to be fatally deceived at any time. In personal understanding there is safety for each and all. And in order to understand, proper books and competent teachers are necessary. In the language of Virgil and Cicero, the *doctor* is a teacher, and that is his true calling still; and to teach the art of preventing disease is vastly more useful to the public and more noble than to experiment upon the sick.

Hygiene in "Medicine" is practically to-day a dead letter. Even Boards of Health who are paid, ostensibly, to carry into effect practical Hygiene are so dominated by the supposed interests of the profession, as a class, that practical Hygiene receives many a fatal stab at their hands. Witness their frantic efforts to keep up a perpetual *small-pox* infection by what they term "vaccination." Witness their introduction of the virus (poison) of many forms of disease by what they term Serum-Therapy; and their inoculation for Rabies (madness), and for many other forms of disease. Witness their futile attempts to ward off microbes by the impossible method of "quarantine," instead of trying in a more philosophic way to fortify the bodies of the people

against any and all danger by means of practical Hygiene. It is evident to an observing mind that the people can never depend upon a profession which is employed as now *only to cure* disease to teach the divine art of *preventing* disease. It is true that through the efforts of some broad-minded philanthropists, like Horace Mann, and Calvin Cutter, the subject of Hygiene has been introduced as a branch of public instruction, but it was admitted to the public schools not as a branch of Medicine, but as something entirely *distinct* from Medicine. In this way its power for good was largely nullified. No hint was ever given that Hygiene had much of anything to do in the treatment of the sick. It would do possibly, as many seem to think, as a branch of Science to be studied by those in ordinary health, but could be of little or no use, as it is supposed, in sickness. It must not be allowed to trespass upon the sacred domain of the sick room. That belonged to the doctor. And the people said "Amen." "We will study Hygiene, but we will not practice it as a means of healing the sick." It seems never to have occurred to them that the same natural laws govern both in sickness *and* in health; and that the same means that *preserve* health are also the essential means for its recovery. *True* Hygiene, be it remembered, should be taught *as* a branch of Medicine, and the application of the principles of Hygiene is always good Therapeutics. These two most noble arts, that of preventing disease, and that of curing disease, must no longer be divorced, but taught and practiced as a branch of universal science. The mistake of centuries has been that the body has been consigned to the medical or drug doctor, and the soul to the doctor of divinity. And having given up both body and soul, the poor patient and humble citizen has nothing left to call his own. Properly instructed in the way of life, the soul will take all necessary

care of the body both in sickness and in health. Therapeutics, based as it now is on experiment, is not a science, nor even an art; it is known in medical parlance as empiricism (experimentation), and empiricism is closely related to what is commonly called quackery. Witness the various conflicting schools of medicine. We need not enumerate them. Only one school will be possible when medicine becomes an established science, and to remove the cause of disease is the only radical cure.

The future of medicine, as a profession, is somewhat problematic. Casting its horoscope, not from the hour of its birth, but from the year of our Lord, 1899, we read as follows, viz: Medicine, as one of the learned professions, will be dismembered. The branch now known as materia medica will be lopped off; and in its place will be grafted a scion from the tree of life. The healing power is invisible, but ever present. It will come to be universally recognized. Pathology will be merged in physiology, and explained as the natural result of unfavorable conditions. The long list of diseases, now numbered by hundreds, will be gradually reduced as medicine becomes a science, until finally all disease will be recognized as a signal of error that cannot be permanently removed till the understanding of the patient and attendants is enlightened. Surgery and chemistry will be taught and practiced as branches of art, by *special artisans,* and not, as now, by medical doctors.

The medical doctor will come to be a teacher again as he was in earlier ages.

Bacteriology, Microscopy and Histology will be studied as branches of Natural History, and not as branches of medicine. In a word, medicine, as now taught, will become a thing of the past; and each man will take complete possession of his own body. It is his castle. The structure of the

body (study of anatomy) will never cease to interest him, and the Logic of Being; or, in one word, Ontology (Universal Science), will forever attract him to higher planes of existence. Each individual will become a naturalist (qualified to be his own physician, but not as some have said, his own doctor [teacher]); and in this way, *i. e.,* by understanding the laws of his own physical and mental being, man will live upon the earth for many years beyond the present limit of his existence. As a means to this end, *every person must know for himself* not only what will keep him in health, but what will *cure* him in sickness also; and these arts, be it remembered, are not two, but one. We may call it a double art. It is the art of CORRECT LIVING. It pertains not to the body alone, but to the soul as well. Medicine, as a profession, has long divorced the soul from the body. The latter was considered by the medical profession as its own special province, while the soul was left to the clergy. This will all be changed, and the soul will come to be recognized as the essential man. The body, as such, is only an instrument for the soul; most wonderful and elaborate, but still an instrument. The office of the body, as a whole, is to individualize mankind, through endless diversity of form, and enable the soul, which is the essential man to become acquainted with the phenomena of nature. The organs of sense, which constitute portions of the body, are all wonderful instruments of perception; the muscles furnish means of motion and locomotion of the body; other parts of the body are instruments for the growth, repair and preservation of these, for the expression of our thoughts, and for reproduction. Now, all these various parts and organs can be kept in good repair, and the whole body be well preserved, so long as it is needed, by simple means, when once properly understood. That this is true we may readily perceive by

reference to other instruments with which we are already well acquainted. Take, for example, a clock or watch, a piano, a saw-mill, a locomotive, or stationary engine. These are all more or less complicated mechanisms, but they are all easily managed. *They* sometimes need repair, but it is the *soul* (or vital force) *that repairs the physical body.* No human artisan can mend it. It requires proper conditions only; food or nourishment rightly adapted and wisely taken in moderation; sleep, exercise, rest; cleanliness, within and without; air to change or feed the blood; and a temperature within certain limits. These are the *essentials* for the body in sickness and in health; and as for the soul, it must find and obey the *moral* law, or it can never be well with the body. We must find peace, understanding and good will within us, or the body will be often rent with passion and error and perish of disease; for the soul is the architect and engineer of the body, and rightly directed will keep the body in perfect health so long as it is needed.

How to live is the all-embracing question; how to select our food, how to cook, how to eat, how to breathe, how to work, how to rest, how to clothe the body, how best to keep it at a proper temperature, how to keep the atmosphere and all food and drink free from noxious and poisonous substances, and, finally, how to dispose of the waste of the body that always attends upon the expenditure of vital energy. To solve these questions is to give us a true science of healing; indeed, the whole science of Medicine (or, better, science of health), may be comprised within the limit of one or two dozen answers to the question How? How to find the true way of life and pursue it constantly is the one single question whose complete answer will be a complete medical and sanitary science. It is only true *knowledge of man and his relations* that we need; and this

each person needs for himself. Right and sufficient knowledge not only restores the sick to health, but what is infinitely better, *prevents* sickness; and it is undeniably true that the same natural and healthy conditions that are necessary to preserve health are also the very conditions, in general, that will in all cases *restore the sick* to health. We do not have one set of natural laws that tend to preserve health, that are to be known and observed by the well alone, and another set for the sick, that they may recover, but one and the self-same law for all. Go and sin no more is, as a rule, the *only prescription needed,* if properly understood and applied. To treat a sick person, as now, by experimentation with drugs is the mistake of the centuries. As a rule, what hurts a well man hurts also a sick man. A sick man is really only the well man struggling under unfavorable conditions. We must correct all necessary conditions. That is all that is needed. And the first condition in order of importance is the

Attitude of the Soul.

We must at once *assume the attitude of health,* and ignore, so far as possible, all ordinary conceptions of disease; at least, we must not aggravate the case by fear. "Fear hath torment." If we start aright on the level or up-hill grade, we may reasonably expect, some time, to reach a higher plane of Being; but if we start on the down-hill grade, we must expect to descend to lower planes. Now, the real, the exact truth is that the patient *is always well,* whatever his condition. It is well that he lives, even though he may be in pain. Pain is only a kind messenger that calls his attention to some untoward condition that needs correcting. We must not banish the messenger ever until his message is fully understood. Let not the patient shrink from his pres-

ence, but seek, if necessary, an interpreter (a teacher), fully assured that the messenger (pain) will quickly depart when there is no longer need of his presence; and to know that pain is *a friend* will always make its presence much more endurable. We said that the patient is always *well*. *Well* is, in Grammar, an adverb of the positive degree. The comparative of well is *better*, and the superlative, *best*. Now, if we start on the down-hill grade by saying, or even thinking that the patient is "bad" or "ill," we cannot proceed, grammatically, without quickly arriving at *worse*, which is the very first step beyond the positive degree of bad or ill; and if we do not reverse the direction, or start anew, we shall never find the much desired conditions of *"better"* and *"best."* These terms are not found in comparing the words bad and ill. To remove all fear by teaching the true philosophy of Being is the first step of the true teacher (or doctor). This he can do by taking himself the most hopeful view of the case consistent with right reason. He expects restoration to health, if that be possible, easily and quickly secured; and when restoration is not *possible*, then he must await in reason the natural release of the soul from a body that is no longer needed. Death is no longer an enemy when rightly understood, or when it is inevitable, and an understanding of the true philosophy of life and Being will rob death of all its terrors. There is *no pain* in death, any more than there is to the infant in birth. Death hath no part in life. It cannot touch life. While life *is*, death is not. *Where* death *is*, life is not. Death is the antithesis of life, a *human* expression merely, and when once we come to understand that life itself is eternal, then death, as now understood, will cease to be; for where life is there can be no death. Now, if life itself ever had a beginning it is not eternal and will have an end; but if eternal, it can have no end,

for that which is eternal never ceases to be. It is an axiom —a self-evident truth—that every effect must have a cause, and a cause adequate to produce the effect. Now, what could ever produce even human life that had not life in and of itself; and is not the fact that life is manifest to us *to-day* evidence that life is eternal? Whence comes human life but from Life that is eternal, and if human life begins in life eternal, and remains in life eternal, will it not necessarily end in life eternal? In others words, is human life something that pertains to man only as a *finite* being, or is it something that pertains to the unfailing Fountain of life that is eternal? And is not consciousness itself a faculty of the soul that lives (or *is*) only by virtue of its union, indissolubly linked, with the great Universal Consciousness? The consciousness that we *call* ours, that dawns upon us in infancy and is constantly expanding and enlarging, so long as we make good use of all our faculties, may after all be only the consciousness, not of self, but of the One universal Cause of all Being, into whose consciousness and treasure-house of universal life, having been once admitted, as heirs, and our inheritance recognized by us, we shall ever remain in it as co-workers of the one Eternal and Universal Source of all conscious Life. A good emblem of human life is the river that rises in the mountain springs. The springs themselves are fed or supplied by rain that falls from the clouds. The river flows down to lose itself finally, *as a river,* in the waters of the parent ocean; and thus the ocean feeds the clouds continuously. The *river,* like *human life,* is finite; *it* begins and ends; but the *water* that forms the river and makes it what it is, is of the same nature, has the same qualities essentially as the water that forms the great ocean which feeds all the clouds and rivers of the earth, with this difference, that the water of the ocean partakes strongly of salt

and other impurities that come from the earth through which the rivers flow; so the soul which is of divine origin, in its earthly experience partakes of lower qualities that must be eliminated by the sunlight of Truth and righteousness before it can rise and *recognize* its *conscious* union with the one Eternal Source of all life and intelligence. The *water* that rises from the ocean and falls from the clouds is pure water, and after forming the river, which is finite, and again mingling with the ocean, is again purified by distillation in the sky, and so is never lost or annihilated, but retains, so far as we know, its essential identity forever. The water does not begin or end with the river. The river is finite; has beginning and end, like human life; but the *water* that forms the river, like the soul of man that forms the human body, does not begin nor end with the river. It is drawn from the Ocean, formed into vapor by the heat of the sun, and again condensed in clouds and rain. As fresh or pure water, it has power to slake thirst and give fertility to the soil and fields of the earth. This quality of pure water *abides* continuously and *forever,* as the consciousness of the soul abides, *when once understood* to be what it is, not merely *human* consciousness, but the real consciousness of the Eternal Mind. The Mind, or Spirit of the universe, really abides with the soul of man forever; and if the consciousness of the soul is an attribute or faculty of the universal and eternal spirit, then so long as the soul is fed or supplied from the one universal, eternal and spiritual Fountain of all Being, it will retain its conscious identity; and in fact it is the union, the indissoluble union, of the soul with the Infinite Mind that gives to the human soul its identity. The Spirit is forever the identical, self-same spirit; and the soul of man is by inheritance the child of the Spirit;

a branch of the Living Vine; a leaf upon the Tree of Immortal Life.

"Rivers to the ocean run,
Nor stay in all their course,
Fire ascending seeks the sun,
Both speed them to their source,
So the soul that's born of God,
Pants to view His glorious face,
Upward tends to His abode,
To rest in His embrace."

Thus armed with knowledge of immortality, the true Healer of bodily ills, the teacher, will be able to inspire his patient or pupil with confidence and dispel his fears. This is the first qualification of the doctor, or health teacher—the first step in the process of healing. Fear paralyzes the nerves and puts to flight the healing power; while confidence, that comes of understanding, puts the soul in the attitude of repose that permits the healing power (vital force, or spirit) to build up and restore.

Ontology (logic of Being), rightly understood, leads the soul—the inner or essential man—directly to the Fountain of all life, and indissolubly binds the patient to the source of all health and power. If the patient is lacking this knowledge of the soul's relation and destiny, the true teacher (doctor) will, by his mental attitude, or by a few well chosen words at proper times, impart such knowledge. But it is the high privilege of every person to acquire for himself, in early life, this knowledge of his relation to the uncreated, and eternal Mind—the Infinite Presence—and this he can do by careful study of natural phenomena (the works of nature), by use of books and teachers, and more directly by the study of his own inner and outer self—the most wonderful of all creations in the wide, wide world.

"Know thyself," said the Greek philosopher; "descended from Heaven to be engraven on the tablet of enduring memory."

"To thine own self be true, and it must follow as the night the day, thou canst not" fail to find, in fulness of time, health, peace and satisfaction.

Value and Use of Atmospheric Air.

Assured that the mind of the patient is rightly poised, and that the will is concentric with the divine will, seeking to promote the best good of all, the next important thing to secure is the proper use of atmospheric air that surrounds the entire earth and is instinct with spirit. Man can live for days without food or drink, but not many minutes without air.

The breath is the best outward type or symbol of that inward Force or Power that we call Spirit. Both tend to sustain human life, and both are invisible. The air is veritable *blood-food;* "the first and chief vital nourishment." The air is also, next to proper attitude of the soul, the first and chief *medicine* for many forms of disease. Cruveilhier recommends voluntary breathing as a cure for muscular convulsions. Colds, coughs, catarrh, pneumonia and pulmonary consumption may all be warded off, and even cured, by *lung-gymnastics.* The office of the lungs is to *air the blood* (in technical language, to oxidize and decarbonize it). The blood of the whole system goes to the lungs to feed on air, and perishes without it. For this reason the blood unduly accumulates in the lungs, *unless* it is duly supplied with a sufficient amount of good, wholesome air; and any excessive accumulation of blood in the lungs is known to physicians by the

name of congestion or inflammation, which is generally attended with more or less distress and danger. Now, this condition of the lungs is quickly and naturally relieved simply by *supplying to the blood, through the lungs,* an abundance of atmospheric air.

Pains in the chest, and very often in *other parts* of the body, is only the *hunger-cry* of the blood for air; and in *common* medical practice this cry is sometimes stifled by the administration of some poisonous drug that proves to be a fatal mistake. All that is needed, in many cases, in order to relieve and cure conditions known as coughs, colds, catarrh, pneumonia and many other unpleasant conditions of the body, is to supply, fully, the lungs with atmospheric air.

The treatment of pulmonary affections, especially consumption, by voluntary breathing, is taught by Dr. Niemeyer, of Leipsic, Dr. Stein, of Frankfort, and many others, among whom may be mentioned the name of Galen, who held the first rank as a physician in the known world for centuries. To cure all pulmonary affections, chiefly by oft-repeated *voluntary respirations,* it may be necessary to supply to the body, in some cases, artificial warmth (cases where the blood is chilled), and to pay some attention, also, to proper diet and exercise. Full directions as to these are given in the author's book on "Consumption and Rheumatism," and need not be repeated here. In the same volume are given *specific directions* for exercising the lungs. The one *important* matter is to change thoroughly the air in the lungs from four to eighteen times a minute, or, in other words, to breathe sufficiently. In order to secure the requisite currents of air to the lungs, it may sometimes be wise for the patient to resort to vigorous action and prolonged exercise of the muscles of the limbs, as in walking, or of the chest or body; and where this is not practicable, to employ

the services of some friend or teacher who can inspire the patient with love, hope and courage; for the exercise of these moral and mental qualities excite the lungs to action almost or quite as readily as muscular exercise. The common phrase, "out of breath," reveals to us the fact that exercise calls for or induces more vigorous respiration, or, in other words, gives rise to deeper breathing, which tends to arterialize the blood. Few persons are aware of the life-giving power of a well *animated soul.* Inspiration of the *soul* itself is also promoted by deep and full inspirations of atmospheric air.

The value of proper respiration will be readily understood when we learn from the study of physiology how the air in the lungs imparts oxygen to the blood and that oxygen or air is in a large sense the very pabulum of life. The brain, which is the organ of the mind, must be well supplied with pure and highly vitalized *arterial* blood, or the *mind* soon becomes confused. At every pulsation of the heart, an ounce or more of blood is sent to the lungs to be renovated. In the lungs the blood gives off its carbon in the form of gas (CO_2) and takes on oxygen. This occurs in all known animals, and tends to render the earth's atmosphere unfit for respiration; but the vegetable kingdom, during its growth, makes use of the carbon exhaled, and restores oxygen to the air for the use of man and animals. This beautiful reciprocity between plants and animals is well illustrated by the following experiment: "A rosebush, blooming with flowers, and a nightingale were imprisoned together in a cage of glass. Each owed its life to the other. Deprived of fresh air, the bird would soon cease to swell its little throat with harmony, but the rosebush eagerly absorbed the air that had been breathed by its loved Philomel and retaining the carbon to increase its growth, blushed brighter tints and re-

turned the oxygen to be inhaled anew by the bird of song; and so often as the nightingale loaded the air with effluvia pernicious to itself, the rose neutralized the poison in its own bosom and returned fresh air to its fellow-prisoner, till at length the nightingale expired of old age, singing its dirge of gratitude, and then the rosebush withered away."

From this we may also learn that living, *growing* plants, unless of a poisonous nature, are healthful in our living apartments. They tend to purify the air. *Cut* flowers should be discarded soon as they begin to wither. All organic matter becomes unwholesome when signs of decay appear. We need nothing to remind us of death, but everything to remind us of life.

We must not be closely confined in rooms with fumes from burning charcoal or unburned illuminating gas. These gases are heavily charged with carbon, which, when inhaled, turns the blood to a darker color, and poisons it. Pure atmospheric air in abundance revivifies the blood. *Correct ventilation* is the *exchange* of air which is too highly charged with carbon for other air which is more richly supplied with oxygen. The necessary change of air for ventilation takes place in the vegetable kingdom; and in high latitudes during winter, while vegetation is suspended, the purified air of the tropics is wafted to other quarters of the globe by the trade winds or breezes that come from the tropics where vegetation always abounds.

We must not leave this subject of properly airing the blood without remarking that reasonable care must always be used in regard to the temperature of the air inhaled. The blood must not be chilled. It cannot circulate when frozen. Young and vigorous persons can, perhaps, bear a little lower temperature for a short time than the aged and feeble, but considerable active exercise is always necessary to keep the

blood moving when the mercury of the thermometer is below the freezing point. Keen, *cold* air, that is liable to chill the blood must, for greater safety, be inhaled only moderately, and through the smaller apertures of the nose, and not through the open mouth, nor too rapidly.

Nutrition.

As to food and drink, if the soul is rightly poised, the *natural appetite* is the best guide, and hunger the best sauce. Beware, however, of whipping up the appetite by use of "Bitters," "Tonics," condiments and stimulants. They lead to increasing difficulty and are dangerous. *Fasting and exercise* is the natural and only *perfect* way to secure a good appetite. The danger as regards the use of any *wholesome* food lies chiefly in the direction of excess. Eat only in response to honest hunger. A vegetable diet, properly selected, affords, no doubt, better protection against disease. Animal food gives a greater tendency to inflammatory and zymotic forms of disorders. Pure water and the juice of fruits are the best fluids for drinking. Good drinking water is clear, has no disagreeable taste or smell, and easily unites with soap for washing. Hard and impure water may, for drinking purposes, be greatly improved by filtering.

In selecting food for the construction of the body—the temple of God—"For ye are the temple of the living God," 2nd Cor., 6, 16—always use your best judgment; and do not allow anything to pass the isthmus (the fauces) between the mouth and throat, without the sanction of a majority of the five senses. If pleasant to the eye, food may be brought near to the mouth where it readily undergoes the inspection of the olfactory nerves; if approved by the sense of smell it may then be passed into the mouth for final examination by

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the sense of taste. If challenged here it must be rejected. The senses of the body and the powers of the mind are all given us for use, but not for *ab*use (abuse).

Cleanliness.

The subject of cleanliness is one that cannot well be disregarded. Cleànliness and godliness are closely related to each other, and both are closely related to health. Cleanliness is freedom from dirt; and dirt is matter out of place. Purity has a kindred meaning with cleanliness. Our bodies must be pure in order to preserve health. Purity is freedom from mixture, or foulness. The necessary consumption of material that takes place in the body for the conservation of strength and energy, for the supply of animal heat, and for the repair of worn-out parts or tissues, always gives rise to a considerable quantity of waste matter that must be duly removed from the body in order to allow to every part freedom of action, and at the same time prevent fermentation and putrefaction of waste and effete matter which would otherwise take place in the body.

Now we will grant to the Mental Scientist that Mind controls the body; but it is not the mind of the patient alone, nor yet the mind of man alone that controls the body, but it is the mind of the patient, combined with all other mental influences that can reach and affect the patient, that controls the body of the patient. For perfect health it is necessary that all mental influences be propitious. Each person lives in a boundless sea of mental influence, both human and divine; and each person to the extent of his ability and disposition contributes to the sum total of mental influences in which he lives, and no one who comes to years of maturity and retains his mental faculties can shun the responsibility of taking

proper care of his body. It is the garden which he is to dress and keep, and his own mind is the gardener. To keep the garden beautiful and productive requires intelligence and care in regard to physical life.

The mind of each person must, therefore, be properly instructed and his *understanding enlightened* in regard to the structure and uses of all important parts of the body, or the body may be much neglected. If the great Universal Spirit, whose unity with man gives identity to the human soul, *solely* and directly took all care of the body, and man had no control, all would be done rightly, we admit, and perfect health would be the result, without any personal effort on the part of man. Or, again, if man was always so intuitive and spiritual that he knew *without* study or special instruction the perfect will of the Infinite, and at the same time *had* no other will but to *do* the will of the one Perfect Mind, his body would still be perfect. But neither the finite mind of man nor the infinite Mind alone has direct control of the body. "We are laborers together with God." (I Cor., 3, 9); or "We are God's fellow-workers." (Late Oxford version of the same passage.) And we also find the same truth by the study of Anatomy. The body has two distinct systems of nerves, though they are both intimately connected and related—the Cerebro-spinal, and the Sympathetic. Over those parts of the body that are controlled by the Cerebro-spinal nerves the will of man has control, so long as the body is kept in good order; but the process of digestion, the circulation of the blood, respiration while we sleep, gestation, secretion and excretion, are all governed, not by the human will, but by the same inscrutable Power that formed the earth while as yet man had no existence. These vital processes are carried on through the Sympathetic nerves, over which man has directly no control; but man has power of

choice and freedom of action within certain well defined limits, and if we do not gather or provide food for the body we perish; and if we do not take proper care of the body in other respects, so far as we have direct control, it will perish, or become unsightly or imperfect.

The body is naturally a place of delight, where man is placed, not merely as a visitor or guest, but as joint proprietor. We ourselves, as human beings, have a personal part to perform. We are not, as the body, mere machines like a locomotive, but we are also, as to the soul or mind, engineers, and the body is the engine. We as individuals must take proper care of it. Again, man is not altogether a spiritual being. He is of the earth earthy as to his body, and his soul is the battle ground for truth and error. Through the Sympathetic nervous system he is no doubt in touch with the spiritual unity of all things; but he is slow to find this out. By ignorance man at his birth knows not God. In addition to the Sympathetic system of nerves that presides chiefly over the processes of digestion, circulation of the blood, respiration, gestation, secretion and excretion, man has also the cerebro-spinal or voluntary system of nerves through which he governs and controls all the *voluntary* parts of the body; and these latter are thus subject to the human finite *will of man*. The two co-laborers must then work in unison, harmoniously, in order to secure perfect health. The divine part is always perfect. The *human* becomes so only through perfect understanding. Each person must know for himself, and the way. Let us now return to the subject of cleanliness, which, rightly understood and practiced, will result in banishing from the earth a vast amount of human misery. All forms of zymotic (relating to fermentation) disease, including Typhoid Fever, Scarlet Fever, Diphtheria, Small-pox, Measles, Erysipelas, Rheu-

matism and Cholera are the result of *fermentation in the system,* which could not arise if there was nothing left in the system to ferment, for all fermentation is the result of uncleanliness. Syphilis and all forms of Venereal Disease, and nearly all forms of skin disease, are also the result of uncleanliness or the abuse of drugs. Verily, it is time for physicians to make known the way and lead the people out of the wilderness of sin and premature death. There is no reason but ignorance of the better way why people should fall into such depths of misery and degradation as many now do. Abundant physical exercise, ventilation, pure and wholesome food, baths, and the absence of all drugs are the necessary and most efficient means for securing cleanliness and purity of body, but purity of thought and mind must necessarily precede purity of body; so let no one say that these are not fit subjects for all to study and know. And please bear in mind that the body is a most wonderful and delicate piece of mechanism. It becomes clogged by overfeeding, and, more frequently, perhaps, by the use of gross and unwholesome food. Clogging of the body leads to fermentation, and fermentation to putrefaction, and a vast amount of loathsome disease. An absteminous diet of pure food, cleanliness of person and healthful exercise will alone prevent a world of trouble. *Suitable diet* and sufficient physical exercise, with proper mental poise, will always prevent any clogging of the bowels (commonly known as constipation). Exercise of the muscles sufficient to give a good and symmetrical development of the body, sends the impure venous blood of the system quickly back to the heart and lungs for purification, increases the tendency to deeper and fuller respirations, and also quickly expels all waste and effete matter from the body. For this reason everybody will be happier and better for taking his full share of physical exercise,

which may be necessary, not only for his own subsistence, but for beautifying and adorning the earth. Judicious and vigorous exercise, as a cleansing process, is really one of the most efficient means for the cure of many physical ills. "The soul that is inert cannot go forward." Activity is a law of life. Among the most intelligent nations of the earth baths have been considered as a religious rite. They are absolutely essential to health and cleanliness.

No secretion or excretion of the body must ever be allowed to remain in contact with any part of the body till it becomes in any degree foul or fetid. A bath of warm water with some nice toilet soap is safe at *any* time. Let parents and guardians teach their children and wards how to preserve perfect CLEANLINESS of the entire body at all times. This *will entirely prevent* certain forms of disease that are now a disgrace, not only to the unfortunate sufferers themselves, but to the medical profession, and even to civilization. We have reason to believe, and do believe, that much of the suffering and supposed incurable disease that is now ascribed to primary infection through error of patients may be more correctly traced to the drug treatment to which patients have blindly submitted.*

We shall now give some natural, pleasant, safe and efficient remedies for the relief and cure of all unpleasant conditions of the body commonly known as disease.

Remedies for Pain.

(1.) Cultivate fortitude of mind. The pain will immediately diminish, lose half its power, when once the patient has concluded that he can bear it. Think of pain, *not* as an

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*See article on mercury, in this volume.

enemy, but as a friend. It has a holy mission, to induce the patient to find and correct some mistake that would otherwise lead to lasting injury.

Learn the use of pain and cease to think evil of it. Pain, rightly understood, is a positive good. The Divine Will, which is also known as the law of nature, always works in the direction of our greatest good, and all good, when *so understood,* is pleasant to us, and no longer evil.

(2.) Find and *remove the cause* of pain, for this is the *only* true law of cure. This law of cure is expressed in Latin as follows, viz.: *Causa remota res cessat.* (The cause removed, the effect ceases.) This law, already well known in physics (natural philosophy), is of universal application in restoring health. Where the cause has already ceased to operate, then *time,* alone, with proper conditions, will always be sufficient to effect the cure. *Time* is always an important factor in the cure of disease. In some cases months, and even years, may be necessary to complete the cure. Make conditions favorable; then wait for the vital force to restore.

(3.) Commence at once to air the blood more fully by proper exercise of the respiratory organs. The cause of pain is often, indeed, very generally, an excess of carbon dioxide (a kind of gas) in the blood, which can be removed only by proper exercise of the lungs.

(Full and specific directions for the proper use of the lungs, and for the cure of lung complaints, are given by the author in his book on "Consumption and Rheumatism." See notice at the close of this volume.)

You will be surprised at the great number of cases of pain that may be relieved and cured by the judicious, voluntary, full and persistent use of the lungs in respiration. An increased respiration is always followed by an improved con-

dition (better oxidation) of the blood; and Prof. Lehmann, in his Chemistry, says: "There is no known disease that does not exhibit a defective oxygenation of the blood." This is the key to the cure of many forms of disease. *Breathe them away* by the God-given use of the lungs. It is a free remedy, always at hand, and easily applied.

(4.) Correct the diet.

The cause of pain may be, and often is, an *excess of fibrin* in the blood, producing a crowded condition of the blood vessels known to the profession as plethora. To correct this condition, a short fast, or a reduced amount of food, or *change* of food, is necessary. (See articles on Diet.) Omit, especially, all heavy food. Give the system time to free itself. Make pure water, or weak, home-made lemonade, till the pain is removed, your only drink.

(5.) A good liberal amount of vigorous, muscular exercise, when admissible, helps wonderfully to eliminate impurities of blood, remove pain, and restore the body to health.

(6.) In case of broken bones, proper adjustment of the bones, perfect rest, and an abstemious but wholesome diet are the proper remedies. It takes bones several weeks to anite.

(7.) If the blood is crowding painfully into some depending part, as the effect of gravitation, raise the depending part, or give it mechanical support.

(8.) Where *inflammation* exists, which is a stagnant condition of the blood, the pain may be often soothed by hot applications or hot water compresses applied over the part. The heat of the compress may be about 110° Fah. Use also an abstemious diet and deep breathing in all inflammatory disorders.

(9.) An aching tooth may generally be relieved by wash-

ing the mouth and teeth thoroughly with warm (98° Fah.) water and a soft tooth brush. Do not forget this.

(10.) For a "corn" on the toe pare away, daily, or often as necessary, the hard, horny part of the corn with a sharp instrument; or soak the toe for fifteen minutes in strong, hot soda water, made by dissolving bicarbonate of soda. Provide suitable clothing for the foot.

(11.) In sensitive subjects proper mental suggestions are useful.

Remarks.

In case of the presence in the system or flesh of any foreign body that obstructs the office of any part, the foreign body must be removed, unless it is likely that the danger or injury necessarily caused by the removal will be greater than the presence of the foreign substance itself.

Undue mechanical pressure upon some part may possibly be the cause of pain. Remove the pressure, but do not take drugs for the removal of pain. The invariable effect of anodynes is to *deaden the sensibilities,* paralyze the nerves, and hasten the death of the patient. Choose the perfect way. Remove the cause.

Remember the law of cure—*Causa remota res cessat.* This is the law of nature and the law of God. It will *never* disappoint.

Whatever the cause of pain it must be found and removed by judicious measures. Irritation of a sore eye, caused by the winking of the eyelid, may be arrested by putting a bandage over the eye to stop the winking. It gives relief at once. Pain of the stomach, back or side may sometimes be relieved by change of position. Let the patient turn upon the other side, or upon the face. Any of these methods given

above for relieving pain are efficient, safe and reasonable; but the ordinary methods of killing pain by use of the hypodermic syringe, anodynes and narcotics, are all hurtful and more or less dangerous. Anodynes, in the form of drugs, produce their effect by deadening the nerves of sensation and not by removing the cause. It is better to avoid them altogether. Commence at once the study of your physical organism and know for yourself the better way. Pain is destroyed by drugs only by destroying to some extent the natural office of the nerves. To drug the nerves so that they cannot report to the soul or mind is to blind us also to the danger of *conditions that need correcting*. The logical result of the continued use of narcotics, or of venesection (bleeding), which was formerly much resorted to for the relief of pain, is death. There is a better way, which has already been pointed out. Whenever in doubt as to the course to pursue, *wait;* or send for the health teacher to explain and advise. It is safer to wait than to resort to dangerous experiments.

Remedies for all Forms of Zymotic Disease.

Zymotic disease implies that a process of decomposition, known as *fermentation*, is going on in the body, which tends to and may end in putrefaction. To counteract this tendency to putrefaction many material agents have been used by members of the profession under the name of "*antiseptics*." The same class of agents is also used in dressing wounds. Antiseptics are all poisons of different degrees of strength; and for this reason are often called "germicides." One after another of these drugs has been discarded from time to time for something less objectionable. We mention here only a few that *have been* of late much used in the profession, viz:

Carbolic acid (Phenol), corrosive sublimate, iodoform and salicylic acid. These are all dangerous drugs, especially for internal use. Antiseptics are needed, if at all, only in cases of strong putrefactive tendencies, and then only should the milder or safer ones be used. We mention below some of the safer and better antiseptics.

Dr. Reclus of Paris very successfully uses *hot water* as an antiseptic. He uses it at a temperature of 50° centigrade, or 122° Fah. At this temperature water is antiseptic, and will cleanse without scalding. *Salt* and *vinegar* (beware of a bad article), already in common use, are poor food but good antiseptics. *Tincture of Myrrh* is a good antiseptic for *application* to canker-sores, and indolent ulcers. To make the tincture ethyl (or grain) alcohol should always be used, and not wood-spirit. Apply it clear or full strength. *Camphor* water in eruptive fevers, or spirits of camphor in Asiatic Cholera may be properly used, if used judiciously. To sum up the list of *our* best antiseptics, we have hot water. Salt, Cider Vinegar, Tincture of Myrrh and Camphor. These five may be considered as Domestic Remedies. They should be studied and their nature and use well understood. They are useful as applications to parts and surfaces already undergoing putrefactive changes, and internally in zymotic disease. Boric (or boracic) acid may also be mentioned here. It is generally considered a mild antiseptic. We have used it in eruptive fevers in connection with camphor water, with apparent benefit. With this included we shall have half a dozen antiseptic remedies for domestic use. (Do not substitute borax for boric acid. The latter is the borate of sodium; the borax is the *bi*borate of sodium, and contains more boron.)

Remedies for Conditions Known as Lung Troubles, viz: Coughs, Colds, Asthma, Catarrh, Pneumonia, Tuberculosis, Phthisis, Pleurisy and Pulmonary Consumption.

1. Assume at once the attitude of defense, or as has been well said, "*Venienti occurite morbo*" (Meet disease as it approaches). Let the will to resist disease rise to the occasion. Do not admit that you are really sick (ill) even to yourself; but resolve to be *better* (comparative of well), and by use of rational means.

2. Use the lungs efficiently for the purpose for which they were intended, viz: to air the blood. If you could see the blood as it passes through the lungs you would see its color change to that of a brighter red at every full inspiration of air. Learn and practice the art of breathing thoroughly. If you do not understand the art of breathing—taking deep and full *voluntary* inspiration—you can always accomplish the same object by taking some kind of *physical exercise* that calls the voluntary muscles of the body into rapid and vigorous action. Hip-hop, running, chopping wood, batting, catching and throwing the ball, riding a bicycle, jumping the rope, shoveling, holding the plow, and horse-back riding are all efficient and sure means of inducing full and vigorous respiration. These exercises are God-given remedies that never disappoint when intelligently used. They are even preferable to voluntary exercise of the muscles of respiration *alone*.

These two things *(willing* and *breathing)* well done, and you are already half-cured and soon, in many cases entirely.

3. If you are coughing to no *good purpose* endeavor to control the cough by efforts of the will. Stop coughing. Violent expulsive efforts of the lungs tend to irritate and

injure the lining (mucous membrane) of the air passages. Use expulsive efforts only so far as *may be necessary* to clear the air pipes of phlegm or other obstructing matter. Always treat *every part* of the body kindly and prudently.

4. If the lungs are crowded for want of room in the chest, *make* room for them at once. Remove or loosen any clothing that prevents free expansion of the chest and lungs, and cleanse the stomach and bowels of any unnecessary burden by resorting to a more judicious diet and reasonable exercise. By cleansing the stomach and bowels, in a proper manner when necessary, you will accomplish a double purpose, viz., make more room for air in the lungs, and carry off waste matter, which if allowed to remain might ferment and produce poisonous products in the system. All food ingested must be *daily* converted into tissue, or used up in replenishing muscular or nervous power, if we would keep the body in good condition. Honest and useful work of body and mind leads to healthy and vigorous life.

5. Use fresh provisions. Salt is a good medicine, when needed, but taken as a food, or in excess, seriously interferes with the necessary process of airing the blood in the lungs. (See article on salt.)

Stop taking impurities of any and every kind into the stomach, and prudently reject all indigestible substances.

6. A hand bath, daily, if properly taken, is useful. It should be *quickly* done with cold or tepid water, so as to avoid chills. Vigorous rubbing with the hand to dry the skin is important.

7. *Suitable* wearing apparel that *will not encumber* the body, and yet be sufficiently warm to be comfortable, is an important matter.

REMARKS.—No stethoscope, no clinical thermometer, no

bacteriological examination, no analysis of the urine, and no drugs are necessary. You will soon recover after correcting your manner of life.

You must, however, always remember that *time* is an important factor in the cure of disease. Do what is proper, then wait. You may expect many times to breathe off pain in a few minutes, but certain conditions of the blood and nerves sometimes require weeks and even months for their removal. Do not resort to measures worse than the disease. Study and know for yourself. Rapid recovery will follow correct living. The latter is sometimes difficult to secure. Seek for it as for hidden treasure.

Infallible Remedies for all Forms of Disease.

Diet, air and exercise, without drugs of any kind, *properly used*, will positively cure a large majority of persons suffering from physical ills. Whatever the cause of disease may be, *all* curable cases will recover in reasonable time simply by *finding and removing the cause of the complaint.*

Understanding is a *universal* remedy. Herein is wisdom. Study and become acquainted with yourself. Nothing is more beautiful or more interesting than the human body, and there is nothing whose study will better repay you. *Know thyself*, and you will be led directly to the Fountain of Life and Health.

To be more specific and at the same time more inclusive, we must mention, also, the following twenty remedies, all of which are safe and *infallible, if properly applied*, and many of them are each applicable to *many cases* of so-called disease: Abstinence, rest, temperance, voluntary lung exercises, sunlight, position or change of position, bathing, massage, water, proper temperature (best secured by muscular

exercise), change of occupation, change of scenery, music, effect of colors, good company, a true philosophy of life, mental suggestion, mechanical support, protection from irritation, and cleanliness within and without. (Diet, air and exercise have been already mentioned.) These remedial agencies will produce the most *speedy* and the most *perfect* cures.

Remarks.

'Tis all in knowing how. Study till you master the art of living. Do not be beguiled into the use of drugs, falsely called medicines, into unnecessary surgical operations (and the majority of operations, and a *large* majority of those performed at the present day *are*, as we most sincerely believe, unnecessary), nor into the belief that sure and definite results will not always follow, sooner or later, the operation of definite causes. All is orderly in Nature, and man will be healthy and happy *when* he learns and follows her beneficent methods. We must each and all understand the principles that constitute true Science; or, in other words, the Way of Life.

If the millennium ever comes we must ourselves help to make it; and this book will blaze the way through the wilderness of drugs and vivisections. The medical colleges that are most largely patronized to-day, and many State and City Boards of Health that greatly desire legislative enactments to *compel* the people to be healthy (how ridiculous! as though a hungry man must be *compelled* to eat) are busily engaged with powerful microscopes searching, as they claim, for the cause of disease; (or, as they put it, the causes of diseases). Now this, on their part, is in reality only a feint. They not only do not make known the true cause of disease, and rarely know it themselves, but they actually in-

crease the dread or fear of disease, and thus increase disease itself. They "sow tares" not only by teaching false doctrines, but by withholding the living truth.

Everybody who thinks must know that all people *desire* good health; that they would be well if they knew how and could; that they do not need to be compelled to be well by any *man-made* laws; that it is easier to live well than to live badly; that ignorance on the part of patients, and not malevolence or microbes, is the real cause of disease; that we eat enough microscopic organisms every day to slaughter a nation, if bacteria, or microbes, were really the efficient cause of disease, as bacteriologists would have us believe; and that the only hope of the people lies in rejecting, casting off entirely from the fair face of society, such a malignant growth as modern Therapeutics. There is no health in it. Its theory of disease and what its cause and cure, is the polar opposite of Truth and Science.

Disease, as such, has in true science, no plural, and the so-called diseases of the schools refuse to be classified. The cause of all disease is not microbes, but the misconception of truth; and its cure, in the best sense, is not drugs, or the knife, but a true knowledge of one's self and of his relations to nature. The modern surgeon who performs ovariotomy (removing the ovaries) *mars,* when he does not destroy, the temple of God. The operation for appendicitis is vivisection always, even when it is not worse—manslaughter. The operations for "floating kidney" and hysterectomy (cutting out the uterus or womb), come in the same category. Read Virgil's description of Fama (fame), and then add to it the present mad thirst for gold and you have the solution of the question—the key to modern surgery. "It is owing to our ignorance," said Abernethy, who was an English surgeon of great repute, "that instruments or operations are ever neces-

sary;" and Dr. Beach, author of The American System of Practice, said: "Seldom or never operate." Admitting that the modern surgeon is conscientious, and that he errs only in judgment when he performs unnecessary operations, still, accidents excepted, there is usually a better way than to wait for his art. We should learn, *each for himself,* to keep the body in perfect health. It is our heaven-born privilege. How shall we do it is the important question? With your kind attention we will endeavor to still further point out the way.

Make up your mind at once to *become your own physician* (naturalist) whoever you may be, and whatever else you may desire to do. You cannot do *anything* well without good health, therefore prepare, early as possible, to secure it. You yourself are the only physician that is always present at a moment's notice; and immediate attention is often of the greatest importance. You yourself, as your own physician, with proper study, will be more likely than any other to understand your case; at any rate you will always feel a proper interest in it, and have no fear of an extortionate fee. In fact, the perfect physician for you can be found nowhere else but in yourself. Prepare at once. It is the only safe course to pursue. We do not expect you to be your own doctor (teacher), but do not let the teacher " physic" or drug you, nor perform any surgical operation which you yourself do not thoroughly understand and approve. [We address this to all candid readers of mature mind.] Teachers, guardians and parents must early and properly *instruct the young* in regard to the structure, use and relations of the various parts and organs of the human body; and in the science and philosophy of universal being (Ontology). There is no greater inheritance than such knowledge. A physician is properly a naturalist, one who understands Nature and

natural philosophy. The doctor (Dr.) is properly a teacher. Each person for the good of all must be his own physician (a naturalist), and it is his privilege to be a teacher of others also.

And now, dear reader, having made up your mind to be a physician, at least for yourself and family, you want to know the next step to take. Well, upon my conscience, and in love of my fellow-man, I can advise you no better than to read and study this volume, now in your hands, until you understand every word and every sentence in it; meanwhile, soon as possible, get and read the author's work on Anatomy. Its abundant illustrations, its easy style and the explanation of all technical terms make it, *par excellence,* a work for the whole people. 'Tis well, also, to study the following text-books by the same author, viz: *Medical Notes* and *Consumption and Rheumatism.* (See list at the end of this volume.)

With these works you can soon acquire, if you are a diligent student, not only a good health education, but also, at the same time a good medical education—two in one. God speed you on your way.

Let us now return to some further elucidation of

Infallible Remedies for Disease.

Many forms of disease arise, without question, from crowding the system with too much food. For all such (cases of plethora), abstinence, till real hunger returns, is an infallible remedy, and the only *rational* one. When hunger returns *then* eat sufficiently, but with wisdom and prudence. Fastings, to be most useful, must be done from *choice,* as the dictate of wisdom, and not from compulsion. One is the act of a freeman, the other the act of a slave. Instead of the

actual fast, however, beyond that of a meal or two, it may be better sometimes to reduce the *quality* rather than the quantity of food. Live for a season—till real hunger returns—on one or two meals a day, and at the same time on one or two very simple articles, viz: bread and milk, rye mush and milk (provided you can secure pure milk), lemonade (lemon juice and water), or oatmeal gruel. Good substantial physical exercise, meanwhile, will pleasantly reduce the required time of the fast. Do all things with cheerfulness and composure. Carefully distinguish, if possible, hunger from an artificial appetite. Learn to adapt the quantity of food taken to the requirements of the system. No *uncomfortable* feeling of fulness must ever be allowed. Failing to secure the *right kind* of food is probably, many times, the efficient cause of excess in eating. If the appetite is *natural* it will indicate the kinds most suitable to take, as well as the quantity.

For excessive taxation of mind or muscle, *rest,* or change, is the only perfect remedy. *Temperance* in all things is of universal application at all times, in sickness and in health. *Persistent and full use of the lungs* is a remedy of great power, and especially in *warding off* nearly all forms of disease. Any depression of spirit must always be met and counteracted by natural or voluntary lung exercises, which must be persistently followed until cheerfulness of mind and activity of body return. Depression of spirit depresses also respiration, and oxidation of the blood enlivens the mind. *Sunlight* is a *life-awakener.* Seek it as much as possible, *except* for eyes not yet accustomed to it, or for eyes inflamed that require rest.

Position of body either favors or hinders the circulation of the blood. Any one single position, except the recumbent, cannot be maintained without relaxation, many minutes without more or less detriment to health. Activity

is almost synonymous with life. A simple change of position will often relieve pain. *Bathing* is essential to cleanliness, and cleanliness is essential to health; but do not weaken the skin by too frequent and long-continued *full* baths. A hand bath with towels daily is useful when properly done. Soap is sometimes necessary for cleanliness, but should not be left to dry upon the skin. It destroys its elasticity. Rinse off the soap with clean water. *Massage* is often a valuable aid in sickness if properly done by a *proper and healthy* person. It is a form of exercse. *Exercise*, next to the proper use of air, is the most potent and valuable remedy for removing all impurities and waste from the system.

Let us repeat: *Diet, air and exercise,* these three alone, properly understood and used, will, in absence of drugs and mechanical injuries, keep nearly everybody in health, and cure nearly all curable cases of physical ailments. Diet does not mean starvation. Far from it. It means the *judicious use of food.* Do not tell a patient what he must *not* eat, but what he *may* eat in preference. We must *satisfy the mind,* and endeavor to secure an intelligent co-operation of the patient. We (patients and physicians) should know *reasons* for our conduct. Whims are not good to feed upon. Let the understanding be reached soon as possible as to diet, as in all things else. Beans are not the best food, especially for sedentary people, because they tend strongly to produce flatulence.

Flatulence shows that fermentation is already taking place in the system, and fermentation leads to putrefaction, which produces many poisonous products; and these in turn give rise to various forms of zymotic disease. We should eat so abstemiously of well-chosen food, and live so actively employed at some useful occupation as to avoid, so far as possible, all flatulence and fermentation in the system. All the

excretions and waste from the body ought to be removed while yet they are sweet and cleanly. There should be no offensive smell about the body or its secretions at any time, and there *is* not in perfect health. Nursing infants are sometimes good specimens of perfect health. Pure food is *unmixed* food. No baking powders have a proper place in pure and wholesome food. Baking powders and hard water are the cause of "tartar" on the teeth, of calcareous deposits in the joints and walls of the arteries, and of premature old age.

Common Salt.

Common table salt is commonly supposed to be necessary to healthy digestion and is commonly reckoned among articles of diet. We dissent from that view. Salt is useful *as a medicine,* but *not* as a food. One of its elements (chlorine) is a poisonous gas; and we believe that its presence in a stomach filled with a mass of fermenting matter, explains the cause of the presence of hydrochloric acid in the stomach, and the hydrochloric acid may, we think, explain the cause of ulceration of the stomach, and of other unpleasant symptoms.

Effect of Salt.

Salt (NaCl.) shrivels the blood corpuscles, chokes up the animal membranes, prevents the formation of fibrin, dissolves the globulins, deadens the skin, causes scurvy and salt rheum and increase of urea. We regard salt as a *medicinal* substance (useful for the sick), but not as a food. It may be more necessary or useful in hot weather than in cold, on account of greater liability to putrefaction.

Condiments.

Black pepper is an incorrigible irritant, and may well be omitted. As a general rule, all spices and condiments may may be well omitted from our articles of diet. Plain, unadulterated, unmixed and unmedicated food is always the best for health and long life. Commit the following poem to memory:

Health Code of Ancient Lore.

[The following lines embody the combined wisdom of the medical faculty of the once famous school of Salernum.]

If thou to health and vigor would'st attain,
Shun weighty cares, all anger deem profane,
From heavy suppers and much wine abstain.
Eat not again till thou dost surely feel
Thy stomach freed of all its previous meal;
This may'st thou know by hunger's teasing call,
The voice of nature, surest sign of all.
Slender in spring thy diet be, and spare;
Disease, in summer, springs from surplus fare.
From *unripe* fruits be careful to abstain,
Lest perchance they should occasion pain;
But when rapacious winter has come on,
Then freely eat till appetite is gone.
Nor fresh, nor old, be bread, but spongy, light,
Tasteful, well baked, of seed freed from all blight.
A stated diet, as it is well known,
Of physic is the strongest corner stone,
By means of which, if you can naught impart
Relief, or cure, vain is your healing art.
Doctors should thus their patients' food revise,
What is it? when the meal and what its size?

How often? where? lest by some sad mistake,
Ill sorted things should meet and trouble make.
Oil, and *raw* apples, nuts and eels, 'tis said,
With such catarrhs as settle in the head,
And leading, too, a long intemperate course
Of life, will render any person hoarse.
Cold water, drank at meals, hath mischief brewed;
The stomach, *chilled,* voids undigested food.
If very thirsty, drink just what you need,
Lest thirst should some consuming fever breed;
Nor stint yourself, but take enough, no more;
So speaks in every age majestic lore.
Milk, *as sole diet,* as by all is known,
Relieves poor mortals in consumption thrown;
But should a fever in the system riot,
Or headache, let the patient shun this diet.
Stripped of all skin, deprived of all their seed,
Grapes, used alone, in special times of need,
Will soothe the swollen liver's angry heat,
And cool the bile in its own ardent seat.
The richest food will be in great default
Of taste, through habit, without savory salt;
Yet of salt meats, the long protracted use,
Will both our sight and manhood, too, reduce;
And beyond all, let none express surprise,
To loathsome psora and to cramps give rise.
Unless compelled you never should combine
At one meal divers sorts of food or wine.
Curb appetite and thus prolong your breath;
Temperance, the doctors, tell us, laughs at death.
Food, labor, sleep, when moderate each day,
Do good, 'tis surfeits hurry on decay.
To rise betimes, at evening to walk late,

Keep man in health, contented and elate.
Let air you breathe be sunny, clear and light.
Free from disease, or cesspool's fetid blight.
At least six times in every fleeting day,
Some tribute to the *renal* function pay,
And twice or thrice all *alvine* calls obey.
Deep sadness, anger or *unwilling* toil
All render human life an early spoil
To death, and thus they hurry on each soul
Toward the last inevitable goal;
While cheerful spirits, magic-like, will raise
Life's tone, and thus prolong its term of days.
But such as unto pompous feasts incline
In youth, invite a premature decline.
Who tampers with a flux may loose his life;
The same with cold, much drink and amorous strife.
'Tis heavy, not light suppers, that give pain,
As common sense and doctors both maintain.
Why should he die whose garden groweth sage?
No other plant with death such strife can wage.
Sage soothes the nerves, and stills a trembling hand,
And sharpest fevers fly at its command.
Alas! no herb in any garden grows
That can avert grim death's unerring throes;
Nature this power most jealously reserves,
Alone the body heals and life preserves.
Music, sweet solace brings to all mankind,
With fair companions of a joyous mind.
Shun mournful thoughts, each fleeting pleasure seize,
Let garments rare thy fancy daily please.
May some dear maid her generous love bestow
To make thy heart with kindred passion glow.
The choicest food and dainty cups prepare,

Yet shun excess and glutton's luscious fare,
And study ever to direct thy life
In pleasant paths and far removed from strife.

What is said of sage as a remedy for a trembling hand, etc., will prove true only *when rightly applied*. It must *take the place* of strong tea and coffee, and not be used with them.

The following poem by Derzhavin should be memorized, especially by the young:

Ode to Deity.

"O, thou eternal One, whose presence bright
All space doth occupy, all motion guide;
Unchanged through time's all devastating flight;
Thou only God! There is no God beside,
Being above all beings! Mighty One!
Whom none can comprehend and none explore!
Who fill'st existence with Thyself alone;
Embracing all, supporting, ruling o'er,
Being whom we call God and know no more!"

* * * * *

"A million torches lighted by Thy hand
Wander unwearied through the blue abyss;
They own Thy power, accomplish Thy command;
All gay with life, all eloquent with bliss;
What shall we call them? Piles of crystal light—
A glorious company of golden streams—
Lamps of celestial ether burning bright—
Suns lighting systems with their joyous beams?
But Thou to these art as the noon to night."

* * * * *

"What are ten thousand worlds compared to Thee?
And what am I, then? Heaven's unnumbered host
Though multiplied by myriads and arrayed
In all the glory of sublimest thought
Is but an atom in the balance weighed
Against Thy greatness; is a cypher brought
Against infinity! What am I, then?
Nought! Nought? but the effluence of Thy light divine,
Pervading worlds, hath reached my bosom too;
Yes, in my spirit doth Thy spirit shine
As shines the sunbeam in a drop of dew.
Naught? but I live and on hopes pinions fly
Eager towards Thy presence; for in Thee
I live and breath and dwell; aspiring high
Even to the throne of Thy divinity.
I am, O, God, and surely *Thou* must be,
Thou art; directing, guiding all, Thou art;
Direct my understanding, then, to Thee;
Control my spirit, guide my wandering heart,
Though but an atom midst immensity, still
I am something fashioned by Thy hand.
I hold a middle rank 'twixt heaven and earth,
On the last verge of mortal being stand,
Close to the realm where angels have their birth,
Just on the boundaries of the spirit-land;
The chain of being is complete in me,
In me is matter's last gradation lost,
And the next step is spirit, Deity.
I can command the lightning and am dust;
A monarch and a slave, a worm, a god;
Whence came I here, and how? So marvelously
Constructed and conceived, unknown; this clod

Lives surely through some higher energy;
For from itself alone it could not be.
Creator, Yes; Thy wisdom and Thy word created *me.*
Thou source of life and good;
Thou spirit of my spirit and my Lord!
Thy light, Thy love in their bright plenitude
Filled me with an immortal soul, to spring
Over the abyss of death, and bade it wear
The garments of eternal day, and wing
Its heavenly flight beyond this little sphere,
Even to its source—to Thee, its Author there.
O, thoughts ineffable! O, visions blest,
Though worthless our conceptions all of Thee,
Yet shall Thy shadowed image fill our breast,
And waft its homage to Thy Deity.
God! thus alone my lowly thoughts can soar;
Thus seek Thy presence, being wise and good;
Midst Thy vast works admire, obey, adore;
And when the tongue is eloquent no more,
The soul shall speak in tears of gratitude."

CHARTS OF LIFE.

(For all mariners who sail life's tempestuous sea.)

"As health is the most precious of all things, the science of protecting life and health is the noblest of all and most worthy the attention of mankind."—HOFFMAN.

No. 1. Conditions of Health.

1. Symmetry of form.
2. Freedom of body.
3. Purity of air.
4. Adaptation of food.
5. Cleanliness of person.
6. Regularity of exercise.
7. Practice of temperance.
8. Influence of sunlight.
9. Tranquillity of mind.
10. Rectitude of purpose.

No. 2. Causes of Disease.

1. Depravity of organization.
2. Errors of diet.
3. Action of poisons.
4. Extremes of exercise.
5. Extremes of temperature.
6. Indulgence of passions.
7. Disappointments of life.
8. Want of sunlight.
9. Irregularity of habits.
10. Effects of injuries.

Remarks.

Health is wealth, and to secure it is the first step to greatness. We should preserve it *as a religious duty*.

The human body is placed under the united control of the individual and of society, and *we are responsible for its preservation* to the extent of our ability. Several systems, one within another, and all wonderfully connected and interdependent, complete the structure of our bodies. These are all fully illustrated and explained in the author's work on Anatomy.

Questions and Answers.

(From the Charts of Life.)

What is the design of the charts of Life?

To teach the essential principles on which health and long life depend.

What is health?

That condition of mind and body that affords the most and greatest pleasure, and enables us to perform all the duties of life in the most perfect manner.

What are signs of health?

A pure breath, lithe and elastic step, freedom from pain, activity, strength, energy, happiness and beauty.

What is beauty?

A trio of perfections; of symmetry, color and function.

How can health be secured?

By observing the conditions of health.

What is the first condition of health?

Symmetry of form.

What is symmetry?

Correct proportion, or harmony of parts.

What does the law of symmetry require?

The law of symmetry requires a good development of the lungs and muscles, an erect figure, and the exact correspondence of the right and left sides of the body.

How can a good development of the lungs and muscles be secured?

By the daily and judicious use of them.

How is the law of symmetry violated?

By compressing any part of the body with tight garments, by allowing stooping postures to become habitual, by taking excess of food or drink, or by neglecting exercise.

How can the form of the body be changed?

By training and diet.

What does the law of freedom require?

The use of loose garments that will not impede the circulation of the fluids of the body, nor the use of the lungs.

How may the importance of air be realized?

By holding the breath for half a minute or more, and then reflecting that we can live for days without food, but only a few minutes without air.

How is the air rendered impure?

By the decomposition of decaying organic matter and by the breath of animals.

How is atmospheric air purified?

By the action of growing or living plants.

What is necessary for good ventilation?

A constant interchange of air between plants and animals.

How is the air purified in winter?

By winds that blow from the tropics where vegetation abounds.

To what must our food and drink be adapted?

To the requirements of growth, climate and exercise.

How is the adjustment of our food best regulated?

By a natural and healthy appetite.

How is the appetite vitiated and destroyed?

By the use of condiments, by excessive indulgence, and by violent emotions.

What do we need to guide us in eating?

Intelligence and wisdom.

What is the best drink for man and beast?

Pure water.

What does the law of cleanliness require?

Frequent ablutions and change of apparel.

What is the best substitute for exercise?

Fasting.

What does temperance imply?

Self-control, or harmonious organization.

What are the fruits of temperance?

Health and cheerfulness.

What does the law of temperance require?

A simple and abstemious diet, and the absence of all poisonous drugs and liquors.

How may the value of sunlight be perceived?

By the condition of plants grown in the dark.

How is the water of all rivers lifted into the air?

By the power of sunlight.

Where do we find birds of the most beautiful plumage, foliage most luxuriant, and the juices and aroma of plants most pungent and penetrating?

Under the direct rays of the sun in the tropics.

What power controls the movements of all parts of the human organism?

The human will, through the cerebro-spinal nerves, controls all *voluntary* parts; and the soul, or inner man, controls all *in*voluntary parts and functions through the sympathetic nerves.

Of what is the brain the organ?

Of the human mind.

Of what is the sympathetic system of nerves the organ?

Of the soul.

How may the mind be prepared to meet the trials, afflictions and disappointments of life with equanimity?

By understanding true philosophy and the object of man's earthly existence.

What does rectitude of purpose mean?

A determination to do right.

What is it to do right?

To obey the conscience is to do the *relative* right; to do that which benefits all mankind is to do the *absolute* right.

Why will obedience to moral law subserve the health of the body?

Because moral and physical laws always harmonize and agree.

What must we consider the body?

As an instrument or organism to bring us as conscious entities into relation with the *phenomena* of being which we call nature—*i. e.,* with the outward, material universe.

What can best preserve the body?

An intelligent, pure and well balanced mind.

How are all the senses best preserved?

By proper attention to the general health.

What do children commonly inherit from ancestors?

A strong tendency to lead *similar* lives and reap similar fruit, whether it be good or bad.

What unfavorable conditions of body are most frequently observed as the result of inherited tendencies?

Deformity, consumption, scrofula, blindness, idiocy and insanity.

What does the phrase "inherited disease" mean?

That the child is fettered all its life by errors of ancestors.

Can inherited tendencies be nullified?

Yes, wholly, in two or three generations, by diligent effort and understanding.

What does a proper diet mean?

The rational and judicious use of food.

What three things are most important in diet?

Selection, cooking and manner of partaking of food.

Which is least likely to lead to septic poisoning in hot weather, vegetable or animal food?

Vegetable food.

What conditions are most likely to result from eating swine's flesh?

Measles, scrofula, trichinosis and tapeworm.

What should cooks endeavor to avoid?

All adulterated articles, flavoring extracts, baking powders, condiments, especially salt and pepper, and any excess of fat or sugar. The *natural taste* of food is appreciated whenever the system is in condition to make proper *use* of food.

What should the partaker of food endeavor to avoid?

Haste, excess, and thoughts of evil.

What is the nature of poison?

To impair health and shorten human life.

Are poisons ever useful as medicine?

Only when necessary to kill or destroy something; they are *not* necessary as stimulants or tonics, nor to disguise symptoms. A poison cannot, in any true sense, be called a tonic. Poisons add no strength, but exhaust strength.

Is exercise dangerous in its character?

Never. All judicious exercise is useful.

What must we avoid in relation to exercise?

Violence and nervous exhaustion. Prudence and discretion are great virtues, and give promise of long life.

What will a competent gardener avoid, if possible?

Extremes of temperature.

What is the best way to warm the blood and body?

By active and vigorous exercise.

What mental states are very destructive to health?

Anger, grief or any violent emotion.

What mental states greatly promote health?

Universal love and benevolence.

How may the depressing influence of disappointments be nullified?

By culture of mind and study of Ontology.

What is a powerful supporter of vigorous life?

Sunlight.

For what has nature made no provision?

For irregularity.

What gives great facility of thought and action?

Experience and frequent repetition.

How might all physical injuries be avoided?

By sufficient knowledge of the laws and forces of nature.

What affords the best protection against disease of every form, and is at the same time the only true remedy?

A knowledge of natural and divine law, and a life in harmony therewith.

Differential Diagnosis.

The degree of health which any person has attained and preserved may be readily known at any time by signs of health, if well understood. Diagnosis ("knowing through," or by means of) is the technical term for distinguishing or discriminating diseases; but it is far better to study health than to study disease. When any person is lacking in one or more of the signs of perfect health, as given below, let him seek to live under more perfect conditions. A better physical life will always bring better health.

Signs of Health, or Mirror of Life.

1. Clear bright eyes.
2. Smooth, clear skin.
3. Clean tongue.
4. Pure breath.
5. Regular and normal pulse.
6. Normal temperature.
7. Lithe and elastic step.
8. Activity.
9. Strength.
10. Energy.
11. Happiness.
12. Beauty.
13. Warm hands and feet.
14. Freedom from pain.
15. Good appetite.
16. Symmetry of form.
17. Sound, refreshing sleep.
18. Regularity of all natural functions.

"The first physicians by debauch were made,
Excess began, and sloth sustains the trade;
By chase our long-lived fathers earned their food,
Toil strung their nerves and purified their blood;
But we their sons, a pampered race of men,
Are dwindled down to three score years and ten;
Better to hunt in fields for health unbought,
Than fee the doctor for a nauseous draught;
The wise for cure on exercise depend,
God never made his work for man to mend."

Dryden.

Professional and Personal Duty.

Physicians, as a rule, are humane and benevolent. They *desire* to do good and restore their patients to health; but their need of money as a means of worldly advancement, and the general unwillingness of the public to pay for instruction as a means of recovering lost health lead the profession to disguise or withhold the truth, and allow the patient to suffer increased and protracted illness, or loss of life. The great stumbling block on the part of the patient is ignorance, and on the part of the practitioner love of gain. Knowing well that the patient will pay liberally for what he supposes will save his life or restore him to health, and that he is too ignorant of nature's divine method of cure to trust to the voice of wisdom and be just to his benefactor, the doctor gives what the patient has been taught to expect and pockets his fee. The patient gets drugs, visits, and surgical operations which, as a rule, he does not need, and which, if we except the friendly visit, do him more harm than good; and does not get what he does need, viz., the unvarnished truth. To this general rule there are many exceptions, for there are no more benevolent and humane people than physicians. They alone are not responsible for the drug system of medical practice. The fault is that of the general public; the impetus of a false system, and false instruction. If doctors are more to be blamed than the people it is because they have stood in the relation of teachers, and have neglected to teach the whole truth, the pure gospel of health. They have set up *false* gods, and the people have gone astray. They have ascribed disease, not to error, not to departures from natural and divine law, but to insignificant microbes, and *material* agencies that are of themselves effects only. They have represented and treated disease

as an enemy that must be destroyed, even at the expense of vitality, instead of a friend that comes to warn the patient of danger and point to a better course of life. They have mistakenly supposed that the profession could rise to eminence while the people struggled and toiled in the depths of physical degradation. It cannot be. There is only one road to eminence. We must labor for the highest and best good of all.

THE NEW PHYSIOLOGY.

Physiology is a scientific term derived from the language of ancient Greece. To the Greeks it was, originally, the study or "Science of nature," or the study of what is now called *Physics*. It was that branch of universal science (Ontology) that pertains to *material* things, while they assigned to another branch of science, viz.: *Metaphysics,* all things that pertain to mental or spiritual science.

Physics pertains to the outward, visible or material universe—that which has been, or may be, produced, brought forth or created. Metaphysics pertains to the *invisible* things that are uncreated and eternal, viz.: true mental concepts and spiritual verities.

Science, in its true nature, is not a fragmentary thing, but a unit, and it can never be studied aright till it is studied as a whole. Physics pertains to the realm of effects only, metaphysics to the realm of causes. One branch is essential to a proper understanding of the other. These two together make science complete. Physiology has hitherto been shorn of its strength, robbed of its attractiveness, and rendered comparatively inefficient as a branch of modern medicine by being confined to the *phenomena* (the mere appearances) of vital action, without attempting to explain the *cause* of vital action. Action always implies an actor, agent or doer. Physiology, as now commonly taught, investigates the changes that constantly take place in living bodies, and attempts to explain the office or use of each part, or organ, but gives no cause (because it does not enter the mental and spiritual realm of being) for the setting in motion or continuing in action the various parts and organs of organic bodies. Thirty years ago we were taught that the *vis a*

tergo ("power in the rear") circulates the blood; to-day in the parlance of the schools it is the *vaso-motor* (*vessel-moving*) *nerves* that circulate the blood; for the modern physiologist does not yet recognize the soul or spirit as the efficient actor. We are still taught in physiology that the *liver* secretes bile, and that the *grey matter* of the nervous system carries on the processes of digestion, respiration, secretion, etc., and there are those that aspire to the honors of the scientist who hold that the cortical (bark or rind) areas of the brain do the thinking. Is this science? By no means. The cortical areas of the brain are the superficial part, but still *a part* of the brain, and the brain is itself a part of the body. The body as a whole is what we call matter. Does that which we ordinarily call matter think? No. Deprived of the soul the body is what we call *dead* matter. The body as such (dead matter) cannot think, feel, act or do. It is inert, powerless, insensate, non-intelligent. Iron, wood and stone are common examples of what is called dead matter. They cannot do anything; they cannot act; they cannot feel. They move only as they are moved; they do only as they are *made* to do; they act only as they are *acted upon*. The doer, the actor, the mover must be sought, not in the realm of inert matter or physics, but in the realm of mind or metaphysics. The *growing* wood is *made* to grow by some inscrutible force or power that we call the *vital* force.

But vital force is not itself material. It cannot be seen by the outward sense of vision, though aided by the most powerful lenses. It cannot be felt or perceived except through matter as its representative. Behind all matter is will, intelligence, energy, power, which are attributes of an *im*material, uncreated substance or spirit, without which we can never explain or understand physiology.*

*(Substance is a more comprehensive term than matter.)

Each part, or organ of the body is really only a *mechanical* device or instrument for the accomplishment of some object tending to the ultimate perfection and happiness of sentient beings.

Physiology properly investigates the phenomena of vital action in any or all organized bodies, but if it fails to conduct us into the realm of *primal causation,* which is the realm of power, intelligence and will, it fails largely of its purpose. The *purpose of physiology* is to discover to man the secret of health and physical perfection, and lead him by irresistible steps into the very presence of an unfailing Fountain of Health, wisdom, intelligence, power and love. Again, physiology should not be restricted to the consideration of parts and organs of the body that are supposed to be in a state of health, and another name (Pathology) be given to the consideration of parts and organs said to be diseased, for several reasons; first, the laws governing the phenomena of organized bodies are identically the same laws in all cases, whether of health or disease; secondly, there is no scientific line of demarcation that separates health and disease, so that we are able to say just where one ends and the other begins; and, thirdly, such restriction is misleading. It tends to divert the minds of the people from the study of a subject of the greatest importance to every human being, viz.: the best means of recovering lost health. The proper study of physiology, unrestricted, would presently do away altogether with the *possibility* of studying pathology, since universal health would be the result of such study. To study pathology (disease) is to face in the wrong direction. It is health, not disease, that we seek; and to study the phenomena or symptoms of disease in the body will never bring health. Health and disease lie in opposite directions. To find either we must travel in the direction in which it lies. The inverted

or deflected course or way of life that now brings sickness will never bring health; and *vice versa*, the perfect way of life that now brings health will never bring sickness. A proper knowledge of physiology brings health. Physiology, therefore, embraces the *entire domain of vital action* under all circumstances and conditions, whether they are good or bad. Under good physiological conditions health is always the result; under bad physiological conditions sickness or disease is always the result. All depends upon conditions and circumstances with which the vital force has to deal.

Pathology implies some knowledge or study of disease; and *without* disease the study of pathology would be impossible. Disease (want of ease) is pain, suffering, or distress of mind; and to study it a thousand years with scalpel and powerful lenses, without the aid of logic and philosophy, would not reveal to us the true nature of disease or its cause. The primal cause of disease must be the misconception of truth;—a want of mental illumination on the plane of physical being in regard to the care and preservation of the body; erroneous *mental* concepts; and these must forever elude our search, if made only with the microscope and scalpel; but if we search with diligence and understanding the whole domain of vital action, tracing effects to causes, unrestricted by fear of trespassing on forbidden ground, we may easily find the path to health and physical perfection.

Pathology (study of disease) of course includes the study of the *cause* of disease which is a very important matter, but the cause (the primal cause) is mental and not material, as commonly supposed. Pathology, as now studied, keeps the face of the people turned ever backward. It seeks the cause of disease at autopsies, in the dead body, instead

of in the living soul, where error (the real cause) alone is found.

"Speak to the people that they go forward," is the divine command.

Human Physiology.

Human physiology treats of the functions of all the various parts and organs of the human body. It studies the body *in motion,* while anatomy studies the body *at rest.* Physiology properly explains, so far as possible, *how* it is that all the various parts and organs are made to *perform their work.* It may include, also, if we choose to consider it, the mode of development of the various parts; and the nature of the compounds composing the various parts. It might also include the nature and relation of the elements composing these compounds; but that is generally taught under the name of Chemistry (science of molecules). Chemistry finds in nature about seventy elements, but only fourteen of these chemical elements are usually found in the human body. The initials of these fourteen elements (to aid the memory) may be written thus, viz: — P. P. Nifhom, SSS, CCC. The names of these elements in full are as follows: Phosphorus, Potassium, Nitrogen, Iron, Fluorine, Hydrogen, Oxygen, Magnesium, Sodium, Silicon, Sulphur, Carbon, Chlorine and Calcium. Of these elements of the body four (Carbon, Oxygen, Hydrogen and Nitrogen) are called "essential" elements because they are *necessary* or essential to the formation of any *organic* body whatever. Two of these four *essential* elements (Hydrogen and Oxygen) are found in water; one (Nitrogen) is found in atmospheric air; and the other (Carbon), makes up the pure diamond.

The chemical elements of the body are not generally found free and uncombined, but are united in variable proportions, forming compounds. The latter are too numerous to be mentioned here. The principal are the following, viz: pancreatin, found in the pancreas; ptyalin, found in the saliva; fibrin, in lean meat; ostein, in bone; globulin, in the crystalline lens of the eye, and corpuscles of the blood; bilin, in the bile; albumen, in the blood and serum; haematin, in the red corpuscles of the blood; mucin, in the mucus; myosin, in the muscles; melanin, in the pigment of the eye; casein, in the milk; creatin, in the flesh; cholesterin, in the bile; neurin, in the nerves; chondrin, in cartilage; and elastin, in yellow elastic tissue.

The elements, *as* such, are not usually supposed to be *alive*, but the various compounds of the body which are formed from them are commonly regarded as *living* matter. Just what the difference is between dead matter and living matter has never yet been made clear to ordinary minds. It is generally admitted by physicists (naturalists) that all matter in the *mineral* kingdom is dead, and that all *growing* matter (that of the vegetable and animal kingdoms) is alive; and yet they are not able to draw any sharp line of demarcation between one kingdom of nature and another. Is the mineral kingdom dead? No. The property of *polarity*, and the *crystalization* of minerals seem to warrant us in speaking of *mineral* life. It would seem perhaps to be more scientific either to consider *all* matter in nature as living matter, *or* to ascribe all evidences of life *in* matter to an agency or force, coupled with intelligence, that is superior to matter. The origin of the word nature (signifying born, borne or sustained) *implies* the presence of something that created and sustains nature; and this same thought enters into the religious conceptions and philosophies of all na-

tions. The word *super*natural, which is in common use, implies the same—something *above* or beyond nature, *not,* however, contrary to nature. Logic also compels the same conclusion. All things that *now are* must, of necessity either be eternal, or they must have had their origin in something that *is* eternal, for it is an axiom—a self-evident truth that "from nothing nothing comes." The things that *are* did not then come from nothing. The thought that they did is illogical. They (existing things) must be eternal, *or* must be made from that which *is* eternal. *They* (*i. e.* forms of material things) are *not* eternal, for all forms of matter with which we are acquainted are evanescent, mutable, and perishable; even the so-called everlasting hills, though long enduring as compared with other material things are not eternal. These have all been made or created, not out of nothing, but out of the *un*created and eternal substance. What is that something, then, whose being is eternal? We all know something of what is called force, intelligence, wisdom, power and love. These are not material. They do not perish. They are *always* present to our minds in greater or less degree. It is not likely that matter ever created power or intelligence. A stream never rises higher than its fountain, nor can the less contain the greater. Force, intelligence, wisdom, power and love are all superior to matter, for they fashion and control matter. They are all attributes of what we call mind, soul, or spirit, and nature is everywhere full of evidence of the presence of a universal mind or spirit that fashions and controls all nature.

"All are but parts of one stupendous whole,
Whose body Nature is and God the soul."—*Pope.*

"'Tis the sublime of man, our noontide majesty,
To know ourselves, part and proportion of a wondrous whole."
—*Coleridge.*

Now mind, so far as we know, although superior to matter, cannot act or manifest itself to the senses of man, except through some form of what we may call *substance,* or matter; hence materialists, confounding matter and substance, hold that *matter* is eternal, and that there is naught else but matter, or Nature. To them Nature is all. Now *substance* is something different from matter. Substance is a generic term; has a larger meaning than the term matter. It includes what we call matter and more beside; it includes the material and the *im*material. Substance, as the word implies, is that which *stands under* and supports something; the underlying truth; the foundation of things; the basis on which all things rest; and, mentally, substance is the basic faculty of the mind, viz.: the understanding. Worcester, in his dictionary, defines Spirit as "*im*material substance." Spirit is invisible, and cannot, like matter, be recognized by any outward sense. Substance, from which all material things have been created, and the attributes of Spirit, which were necessary to creation, are necessarily *un*created and eternal; but *all forms of matter,* so far as we know, are created and finite. We do not commonly ascribe to matter as such, the powers and faculties of the mind or soul. Matter and mind are diverse. Matter and mind are separated, however, not by space and time, as many suppose, but by *logic* only. One is visible, the other is invisible; one is divisible, the other is indivisible; one is powerless of itself, the other powerful; one is the effect, the other is the cause; one is the natural, the other is *above* nature. In this sense Mind is *super*natural. Spirit (spirit and soul are often confounded) is also supernatural because it is *above* nature. Spirit with all its powers lives continuously and is unchangeable; matter dies or falls onto a lower plane of being. Matter is said to be dead, but in a relative sense only, when it

ceases to manifest any evidence of the *presence* of Spirit or Mind. The mineral kingdom is made up, as usually considered, of dead matter; while the animated forms of organized beings are said to be alive. The *degree* of animation manifested, or, rather, the apparent presence, or apparent absence of some attribute of mind, or spirit; or the evidence manifest, or want of evidence of the presence of some energizing power seems to be the only philosophic distinction that can be made between what is commonly known as living and dead matter.

As to the number of elements (seventy or more), now said to be found in nature, it may yet appear in the discoveries of the future that all the different elements of the material universe are only so many *different states or conditions* of one universal and uncreated substance. The *atomic* (atom signifies uncut or undivided) theory on which chemistry is built, does not explain the difference in quality of substances that are chemically identical (isomeric bodies), of which there are several, nor does it harmonize with the idea that divisibility, as has been taught, is one of the essential properties of matter. The only apparent limit to the divisibility of matter is the imperfection of human sight, and the need of more perfect instruments for subdividing. Matter may be divided, so far as we know, indefinitely; but mind cannot be divided. When present, mind is, at the instant, always present as a whole. Hence mind and matter are *logically* separated; but as to space and time, mind and matter are never dissociated. We speak now more specially of the One Universal Mind which includes all other minds and all forces manifest in Nature. With these remarks on mind and matter we shall, we trust, be better able to explain properly the various functions of the parts and organs of the human body.

The body, per se, is *in nature,* is material, but it does not move itself; every part and organ of the body is an instrument only of an unseen force or power that moves it, and we can never understand human physiology properly till we have some true conception of the force or power that moves all the various parts of the body and runs the entire machinery. There is really but one Force or Power in the universe and all other so-called forces and powers are subordinate and limited. That one Force or Power that creates and sustains we may call the Universal Mind, Spirit or Universal Presence. For abundant proof of this Universal Presence we need only refer to the wonderful mechanism of the human body and the still more wonderful *action* of its various parts and organs under the more or less harmonious and joint control of the finite human mind and the Infinite Intelligence and wisdom of the universe in which we live. In the human body the *finite intelligence* of man, *i, e.,* the human mind, acting through the cerebro-spinal, or voluntary system of nerves, controls the voluntary muscles, and organs of special sense and thus carries on a vast number and great variety of industrial employments that contribute not only to the sustenance and comfort of man's physical existence, but to the enjoyment and delight of the senses.

It is man's special province to select and prepare his food; provide shelter and raiment for his body in any climate in which he may choose to live; select his choice of occupation, and pursue it; give more or less attention, at the command of the human will, to cleanliness and the care of the body; to assist, or to hinder its perfection and growth, either by learning to act in harmony with the laws of his being, or by disregarding them; to reproduce his kind, and direct his offspring in the walks of life till understanding is developed as a guide; and to intelligently co-operate with the Higher

Will of Nature's Author in securing the greatest possible happiness of the human race. On the other hand, there are certain parts of the body that are not under the direct control of the human will. As parts of the body these retain their position in it so long as the integrity of the body is maintained, and as to locomotion share the fate of the body as a whole; but the special functions of respiration, while we sleep, the circulation of the blood, digestion, gestation. secretion, excretion, and the growth and repair of the entire body are all under the direct control of the Sympathetic nerves that do not respond directly to the *human* will. The Sympathetic nerves are evidently controlled in health by the same Power and Intelligence that paints the rose and directs the planets and stars in their courses. The sympathetic nerves and their branches of distribution to the brain are undoubtedly the avenue through which man's inspirational and emotional nature is reached, and when all the nerves of the body are well attuned and unobstructed, as they are in a body properly cared for by a philosophic and well trained mind, man may listen to the music of the spheres above him and sense the thoughts of other minds. The lesson of the nerves teaches us to care well for the body, so far as the human will has jurisdiction, but leave with confidence the other parts, not under the control of the voluntary nerves, entirely to the control of the Higher Will that knows no error.

Evolution.

The doctrine of Evolution, as taught by Charles Darwin, and widely accepted, does not, as some suppose, account for the creation or *existence* of things. It is rather the *method* only by which the Author of all existing (or material) things brings them from lower to higher states. The

word evolution signifies unrolling or unfolding. It is Nature's mode of development. That is all. It does not explain the primal *cause* of things. Now, it is evident, if we attend to the meaning of words, that nothing can ever be *un*rolled that was not first rolled up. The unfolding of a flower implies that the flower had previously been folded, or infolded, otherwise it could never be *un*folded. The square root of numbers could never be extracted if they had no root involved. *In*volution is essential to Evolution. Such is the conviction of every intelligent mind. If man has *de*scended from lower types of animals, he must be very low, or the lower types of animals must be very high. Thus, it appears, as evolution is commonly understood, that the anthropoid apes, or the chimpanzee were our progenitors. Would it not be better to regard the lower types of animals only as so many successive steps *towards* the outward expression of man? The evolution of man is the unfolding of the perfect *ideal* man, which was *in*folded with the Father of all being before ever the world was. And when we speak of bioplasm (life-formed), or protoplasm (first-formed), as being the origin of every organic form, it is well to remember that the ideal form is *in*volved in the protoplasm.

Every living thing is but some partial expression of an ideal form; and the protoplasm, as such, has no will or intelligence of itself any more than a stone or brick has will; it simply *becomes* what it *is made* to be. Protoplasm is only a name for unorganized matter which is about to be moved and guided to its destiny by an unseen Power, or mysterious Presence. We sometimes say "Forces inhere in matter," which is only another way of saying that forces are present and acting, and as they act, their manifestations in matter, or through matter, become evident to our physical senses.

Protoplasm is said to be composed of the four essential elements (Carbon, Oxygen, Hydrogen and Nitrogen), and a little Sulphur. Now, these *elements* are said to be dead matter, but they are made to combine under certain circumstances and form protoplasm. The protoplasm is said to be *living* matter because it is made to manifest what is called spontaneous motion, which is to say, it moves without any apparent external cause. It grows and develops into an organism. If it is an offspring or part of some organism already existing it will be *of the same kind* as its parent, or possibly a single step higher in the scale of being on the external plane; but if it be the *lowest and first* organic form ever produced it is a case of *spontaneous generation,* for it had (being the first) no earthly parent, no previous organic form from which to spring. Many of the early philosophers believed in "spontaneous generation," but modern physicists as a rule do not. Logic, however, settles the question at once and for all. The *first* organic form could not possibly be produced from a *previous* organic form, for no other had ever been created prior to the first organic form of which we speak. As to *later* organic forms Natural History shows that they do reproduce their kind, but the lowest and first of all must have been a case of spontaneous generation, or, in other words, of primitive formation.

The Cell Theory.

We come now to what is known as the cell-doctrine or cell-theory, viz.: that the bodies of all animals and plants are made up of cells and their numerous derivations. This doctrine has been held by a majority of biologists for fifty years. It is now likely to be abandoned. In fact there is no well settled opinion as to what constitutes a cell. It will probably

go with the atom. Both cell and atom are purely hypothetical forms. The word cell signifies a hidden or inclosed space. As commonly understood, it is a lump of protoplasm about to be transformed into an organic being. More we cannot say of it. The fact that the cell is penetrated by, and united with other cells by means of numerous delicate *fibres,* as modern observers declare, is proof that it is not a definite structural or physiological unit of the body.

The whole cell theory rests on the use of an imperfect and artificial instrument known as the microscope. One author tells us that the main aim of histological microscopy "is to find out *where* the life is located." We reply that life is everywhere. There is no place, speaking in an *absolute* sense, where life is not.

The only question as to life is, on what plane of being is it manifesting? Is it on the animal, vegetable or mineral plane of being? Death is a term of negation; it is the antithesis of life; a relative term only; the liberation of force or power, and the return of so-called *animated* matter onto a lower plane of being. The protoplasm, or matter about to become animated, is a structureless substance, and destitute of motion, except by external influence. As it passes the boundary line that is supposed to separate it from the elemental kingdom of dead matter its step is so silent and stealthy that no eye, though aided by the most powerful microscope, has ever seen it. The line of separation is purely imaginary.

All is one grand whole, and Nature herself blends so imperceptibly into the mental and spiritual realm of being that no mortal sight can follow her as she crosses the border. The microscope may show us additional wonders of minute organisms, but can never solve the mystery of Being. Spir-

itual things are only spiritually discerned. The mistake of biologists is that they do not recognize the fact that man lives at once in two worlds—the visible and the invisible. The soul, which *forms* or fashions the outward body is entirely beyond the field of the microscope. Logic and intuition alone can penetrate these mysterious and hidden fields. We must study man as the triune being of which the physical body is only the outward manifestation of the energizing soul; while the soul is the child of the Spirit that constitutes the Tree of universal Life. The Spirit is perfect; the Soul more or less imperfect according to its progress in science and truth; and the body is the product of the soul and its environment. The physical body is deciduous, but the soul tends ever towards the central sun of Perfection—the Light of Life; universal Spirit.

The Blood.

The blood, which is the river of life, is the common carrier of waste and supply in the system; and its proper condition and circulation are among the most important considerations of the physiologist. Its circulation through the lungs (the pulmonic) was first made public by Michael Servetus, a Spanish physician, who was burned at the stake for opposing the views of John Calvin; but the general circulation (systemic) of the blood was discovered by William Harvey in 1628, A. D. The circulation of the blood is carried on chiefly by means of muscular tissue of the heart and large blood vessels, acting under the impulse of nerves (the vaso-motor) connected with the sympathetic system. It was by considering the *office* of the *muscular tissue* found in the coats of the large blood vessels that the author was led (in 1861) to discover the fact that the soul controls the cir-

culation of the blood through branches of the sympathetic nerves*

Prior to 1861, A. D., the heart and *vis a tergo* (power from behind) was the cause assigned for the circulation of the blood; and to this day the power of the soul is not generally recognized by physiologists as the controlling agency; but in recognizing the *vaso-motor* nerves we are one step nearer the truth that the soul governs the body. Of the vascular mechanism the heart is the great central organ. It lies within the chest, between the lungs, and the greater part of it lies to the left of the median line of the body. The heart has four cavities—two auricles and two ventricles; the auricles occupying the upper part of the heart and the ventricles the lower. Between the auricle and ventricle, on either side, is a valve; on the right side the tricuspid valve, and on the left, the mitral valve. These valves both open downwards and prevent the blood in the ventricles below from flowing back into the auricles. There are other valves (the semilunar) at the commencement of the large arteries that receive the blood as it goes out from the ventricles of the heart. These semilunar valves prevent the return of blood into the ventricles. One of these semilunar valves is situated at the commencement of the pulmonary artery in the *right* side of the heart, and the other is at the commencement of the aorta in the *left* side of the heart.

The dark venous blood of the entire body is poured into the right side of the heart through two great venous trunks that bring the blood from the upper and lower parts of the body. The upper, large venous trunk is called the *upper vena cava,* and the

*[The *name,* "vaso-motor," afterwards given to these vessel moving nerves, discovered by the author, was first noticed by the author in Foster's Text Book of Physiology, Pub. in 1877.]

lower one the *lower vena cava.* These two great trunks of the veins pour the venous blood into the right auricle of the heart. At the same time the pulmonary veins (three or four in number) that return the arterial blood from the lungs to the heart, pour the arterial blood into the *left* auricle of the heart. When the two auricles are full they at once commence to contract at their upper part which lies at the base (upper part) of the heart. This contraction at the base of the heart closes immediately the ends of all the great vessels that open into the right and left auricles and the blood in the auricles is then forced into the ventricles below. The contraction of the heart (commencing at its base) from above downwards quickly reaches the ventricles. The contraction of the ventricles at once closes the valves between the ventricles and auricles (the tricuspid on the right side, and the mitral on the left), and the blood is then forced out of the ventricles, on the right side of the heart into the pulmonary artery, which carries it to the lungs, and on the left into the aorta which with its numerous branches distributes the blood from the left ventricle over the entire body and limbs. The blood thus reaches the capillaries where it enters the veins and then returns through the veins to the right side of the heart as *venous* blood. We must observe that the two sides of the adult heart are entirely separate and distinct from each other, and that the venous blood of the right side of the heart goes to the lungs to be aired (or oxidized and decarbonized) before it enters the left side of the heart; that the blood enters first the *auricle* of the heart on either side, and passes down from the auricle into the ventricle of the same side; and that the entire heart (both sides together) contracts at the same time from above downwards. In the fœtal heart, while the blood of the fœtus can be aired only in the lungs of the mother, the blood passes from

the right side of the heart of the fœtus directly to the left side of the heart through an opening called the *foramen ovale* that closes up soon after birth. We ought next to consider that the circulation of the blood is not directly under the control of the human will, although we have reason to think that it is, or may be, to some extent, as is indicated by the structure of the heart, for some of the fibres of the heart are marked (striated) like the fibres of *voluntary* muscles. Indirectly we know that the passions and emotions of the human soul, acting through the sympathetic nerves, exert a powerful influence for good, or otherwise, over the circulation of the blood. We can also by voluntary exercise of the voluntary muscles, as we well know, directly increase the activity of the circulation in the veins. These vessels, the veins, are furnished with numerous valves that prevent the return of blood in the veins so that muscular pressure upon the veins hastens or promotes the venous current. For good health the blood must be pure, nutritive, active, and free to move within its vessels. It is kept pure by proper emotions, proper food and exercise, and due attention to the skin, lungs, bowels, and kidneys; it is made nutritive by the due and proper action of well-supplied digestive organs; it is kept active by the emotions of the soul and proper action of the lungs and muscles; and it is kept free by healthful emotions, by loose and proper clothing, by allowing no prolonged mechanical pressure upon any part or organ of the body, and by the sustained action of healthy nerves.

Coagulation of the Blood.

Coagulation (clotting) of the blood is a phenomenon that has been well observed, but is not well understood. Arterial blood usually coagulates in three or four minutes after it is

shed or escapes from the arteries, and venous blood in about five minutes. The blood of an asphyxiated person (one who dies from strangulation, hanging, or drowning) coagulates very slowly, owing to the blood being surcharged with carbon, or from being deficient in oxygen.

Coagulation is checked or prevented by the presence of salts, acids and alkalies.

The clot consists essentially of what is called *fibrin*. This first appears in the blood as a close feltwork of delicate elastic fibrils, or threads that pervade the entire coagulating fluid. These fibrils shrink and coalesce until they form a soft jelly-like substance that takes the name of clot or coagulum. The formation of fibrin is a process of fibrinization or coagulation that probably goes on continuously, so long as physical life continues, not in the blood vessels, but in the meshes of the capillaries of every part of the body where blood circulates, and is essential to the growth and repair of the body, and when the fibrin is in excess it tends to inflammation and abnormal growths. The amount of fibrin formed from the blood undoubtedly depends chiefly upon the amount of albuminous, or nitrogenous food taken into the circulation. It usually amounts to one or two, possibly three, parts of fibrin to 1,000 parts of blood. The use of the fibrin in repairing wounds of blood vessels has long been recognized. The clot formed at the seat of the injury soon checks bleeding from small vessels, and plays a useful part in repairing mechanical injuries of other parts of the body, but whether the fibrin forms the threads from which nearly all the tissues of the body are woven, as at first declared in the author's work on Anatomy, is still a question that is tacitly ignored by physiologists. If the delicate fibrils of the fibrin are not spun from the transuded blood in the lymph spaces among the capillaries of the various

parts of the body for the special purpose of building up and repairing all parts of the body, by the process now known as coagulation, then the profession knows nothing of the process of assimilation. The liquid elements of food that are destined to form the plasma and corpuscles of the blood must, of necessity, take a semi-solid and definite form *somewhere* and somehow, or they could not form any part of the solid and semi-solid parts of the body; and where else, if not in the lymph spaces among the capillaries can such transformation take place? The plasma of the blood reaches the capillaries in a fluid state. The walls of the capillaries are porous and the microscopic white corpuscles of the blood are known to pass, and some say the red corpuscles also pass, through these pores of the capillaries. If the white or red corpuscles, or both, pass through the walls of the capillaries then certainly the fibrin which is held in solution in the blood plasma (the liquid part of the blood deprived of its corpuscles) can also pass through, and we have reason to believe that it does pass through with the plasma and white corpuscles, and that the lymph spaces (or interstices among the capillaries) are the destination of the fibrin of the blood and that it is spun into threads in the lymph spaces by the process known to us as coagulation, and used up in the construction and repair of the tissues. It is certain that some portion of the nutriment taken into the blood from the alimentary canal and air vessels of the lungs is deposited while the blood passes slowly through the capillaries that separate the arteries from the veins, for it is in the capillaries that the great changes in the blood take place. The *arterial* blood goes to the capillaries laden with nutriment and oxygen; the *venous* blood leaves the capillaries deprived largely of nutriment and oxygen and laden with waste from the worn out tissues. The change from arterial to venous blood takes place in the capillaries.

Healthy and pure blood does not clot in the living blood vessels, and for this reason coagulation is commonly supposed to be an abnormal process; but we have given reasons tending to show that *normal* coagulation takes place continuously in the interstices (lymph spaces) among the capillaries; and that the fibrin so formed is the material from which the tissues of the body are chiefly woven. If this is true, then we can say further that the lymph returned into the circulation by the lymphatic vessels in general, with the exception of the lacteals and thoracic duct that are more properly called nutritive canals, instead of lymphatics, is really only the filtered *serum* of the blood that remains in the capillary interstices after the fibrin of the blood plasma has been taken out from the plasma that is transuded through the walls of the capillaries.

Why the blood remains fluid in the blood vessels when it soon coagulates if removed from the body is still an unsolved problem. One author (Yeo) says that "coagulation is the outcome of certain chemical changes concomitant with the death" of the blood, while we regard coagulation as a process essentially vital.

What better evidence of life can we have than the spinning of fibrils or threads that make up the tissues of the body? And why should the plasma of the blood in dying go through chemical changes resulting in the formation of delicate fibrils that are so useful in plugging the open ends of bleeding vessels? Death is not a process of formation, but of disintegration. The chemist with all his art cannot form these little threads of fibrin that compose a clot of blood. Protoplasm is differentiated into various tissues, organs and systems, but such changes as take place in protoplasm, are not concomitant with the death of protoplasm, but are the best possible evidences of life.

Respiration.

(Breathing.)

The breath, that is so necessary to life and health, serves to remind us of the spiritual principle, the essence of being, that forms and sustains the human body. Both are invisible, both are life-sustaining. One, the breath, is a part of the boundless atmosphere that stretches away to be lost in the planetary and universal ether; the other is that infinite Presence in whom all things have life. By some adequate knowledge of the breath we may be led to recognize the very source of Being, as Dryden said:

> "Some few, whose lamp shone brighter, have been led
> From cause to cause, to nature's secret head,
> And found that one first *principle* must be."

It was the breath that first led ancient authors to name the original cause of all things Spirit, as we know by the derivation of the word Spirit, which literally signifies "breath." The breath is as necessary to the life of the body as the Spirit is necessary to the life of the soul. One is a good representative of the other. *Ex*piration (the going out of the breath), is a synonym of death. When the final breath goes out human life is ended. Again, *in*spiration (taking breath or inhaling air), has come to signify also the reception of superior mental and spiritual endowment; so much is breath akin to life.

The act of breathing includes *in*spiration and *ex*piration. One is as necessary as the other. The constant and frequent repetition of the act of breathing constitutes what is called *respiration.* The infant breathes every two seconds or oftener; the adult about half as fast. Eighteen respirations per minute is, for the adult, considered the normal

rate. As a rule small animals breathe rapidly, or more frequently than large animals. The elephant breathes only about half as frequent as man, and the whale breathes the outer air only two or three times per hour.

Muscular exertion naturally calls into play more vigorous action of the respiratory apparatus, and so do also the enlivening emotions of hope, joy and love. These should be our constant companions. The chief organs of respiration are the lungs. The "lights" of animals and the "gills" of fish perform the same, or a similar office. Air is admitted to the lungs through the various respiratory passages, viz.: the nasal passages, or mouth, the throat (pharynx), the larynx, or organ of voice, the windpipe (trachea), the bronchial tubes and their numerous branches. The branches of the bronchial tubes terminate in the air cavities (alveoli) and air cells of the lungs. These air passages are all lined with mucous membrane that secretes a more or less viscid liquid called mucus, which is necessary for keeping the air passages properly cleansed and moistened. The mucous membrane may, also, in case of necessity, be made to serve as a depurating or eliminating organ to remove certain useless and unnecessary material from the lungs and blood. When thus forced into unusual service, as an eliminating organ, the mucous membrane, or patient, is said to be affected with *catarrh.*

The lungs themselves are closely packed around the heart within the cavity of the chest, and rest below upon the diaphragm which forms the movable floor of the chest. By means of the diaphragm (for description see the author's work on Anatomy), and other *muscles of inspiration* the capacity of the chest is greatly and repeatedly enlarged, and thus room is made for air which rushes in to fill the air cells of the lungs driven by the elasticity of the air or atmospheric

pressure which amounts to a force of fifteen pounds upon every square inch of surface. When the muscles of inspiration relax the devitalized air in the lungs is expelled chiefly by the elastic power of the lungs themselves, but aided by *muscles of expiration* that help to depress the ribs in front, and by others that indirectly force the central part of the diaphragm upwards. The muscles of respiration are governed by nerves belonging to both the voluntary and involuntary systems, and their action is largely, but not entirely, under the direct control of the human will, at least for a short period of time (one or two minutes); but a voluntary or involuntary suspension of respiration is soon followed by a state of total unconsciousness on account of the rapid change of arterial to venous blood that takes place in the tissues of the body. For this reason the lungs are considered *vital* organs; in fact we may say that the heart, brain and lungs form the tripod on which rests the citadel of life. The physical flame of life is supported by the oxygen of the air, and goes out if deprived of it; not by pure oxygen, as known to the chemist, but by oxygen diluted as it exists in atmospheric air. Pure chemical oxygen is too heavy or dense and too stimulating to the tissues of the blood vessels and nerves for inhalation.

Arterial blood is of a bright red color and contains more oxygen and less carbon than the darker venous blood. The carbon of the venous blood is given off from the lungs in the form of a gas (CO_2) named carbon dioxide. The interchange of these gases (oxygen and CO_2) takes place in the lungs between the blood in the blood vessels of the lungs, and the air in the air cells of the lungs, through the thin and delicate tissue that lies between and separates these fluids, by a process of diffusion or transfusion known as osmosis. Osmosis of fluids through animal membranes

takes place more freely when the fluids have less specific gravity or less density. Salt water does not pass so readily as fresh water through an animal membrane. For this reason the blood should not be made too dense or heavy by any excessive use of salt, sugar or other dense substance that has been or may be used as food or medicine.

The ganglionic nerve center that governs *in*voluntary respiration is said to be located in the *medulla oblongata* near the base of the back brain, but the *voluntary* action of the lungs is probably governed by nerves arising in the cerebrum, or upper brain. The *involuntary* action that controls the lungs in sleep, or when we are unconscious, is an instance of automatic or reflex action, and depends upon the condition of the blood. When the blood is heavily loaded with carbon (or C O2) and the condition of the nervous system is normal the nerve center in the medulla will naturally or automatically transmit impulses that tend to increase respiration to air the blood.

A *sigh* is a long and deep inspiration *following* a period of too shallow breathing. Our breathing is shallow or temporarily omitted in periods of deep study or great anxiety that for the time being closely fixes or absorbs the whole attention of the soul. *Sobbing* is a series of convulsive and short inspirations or an ordinary inspiration broken up into parts by the effect of sadness or by action of the will.

Laughing is a series of short expirations or convulsive expirations. *Sneezing* and *coughing* are forcible expirations, one to clear the nostrils of any irritating matter, and the other to clear the deeper parts of the respiratory passages. A cough may be caused by reflex action from some irritaton of the stomach or liver, as the same nerve (pneumogastric) is distributed to these organs and to the lungs. Coughing is proper and useful only when it helps to

clear the respiratory passages without irritation or too severe effort. The lungs must always be used with reasonable care and moderation. *Hiccough* is a sudden inspiration due to sudden contraction of the diaphragm followed by sudden closure of the chink of the glottis *(rima glottidis)*. It is due to spasmodic action of the diaphragm, and is caused by irritation of the stomach, liver or other parts supplied by the sympathetic nerves that communicate with the respiratory centers of the brain. Such action of nerve centers in response to sensory impulses from other parts is called "reflex action."

Digestion.

(Distribution.)

The common idea of digestion, as now commonly taught by physiologists, is, as we conceive, more or less imperfect and misleading. Some writers regard digestion as a mere process of solution; others as a process of fermentation; and others, still, as a mere act of separation. The word itself, as derived from the Latin, signifies "to bear apart" or distribute; and the process may therefore with propriety be regarded as an act of *distribution of food* to all parts of the body where it can be used as material for growth, repair, fuel or liberation of power. *How* food is *transformed* (assimilated) into all the various tissues of the body is not implied in the word digestion, nor is it known at present, and the physiologist who does not recognize—if any such there be—one Supreme and Intelligent Mind as the cause of causes must at present content himself to ascribing this transforming power to the vital force or to the cells of the various tissues, although the very existence of the cell as an independent entity is denied by good writers. If an "undevout astronomer is mad," what shall we think of the unde-

vout physiologist? It is misleading to call digestion a process of fermentation, and the digestive fluids (saliva, gastric juice, bile and pancreatic juice) or their essential principles (ptyalin, pepsin, bilin and pancreatin, or trypsin) "ferments" because it confounds the process of digestion with the *ordinary* processes of fermentation, which is not intended. No writer that we have read claims that ptyalin, or pepsin, is an *organic* ferment like that which produces the vinous, acetous or putrefactive fermentation; and Parr in his medical dictionary, speaking of *fermentation*, and especially of *inorganic ferments*, tells us that the term is used "without any scientific discrimination." Healthy or normal digestion is as far removed from the ordinary process of fermentation as life is removed from death. What are the facts? Let us follow the process of digestion as it occurs naturally in a state of health. Food properly selected and prepared is at first taken into the mouth where it is broken up or divided (masticated) by aid of the teeth and muscles of mastication and mixed with the juices that flow from the salivary glands; it is then passed into the stomach where it is mixed with the stomach (gastric) juice, and where the more fluid parts may be absorbed directly into the blood vessels. From the stomach the remaining portions of the food are carried into the small intestine, where, just below the stomach, they come in contact with bile from the liver and pancreatic juice from the pancreas. The latter secretions help to break up (emulsify) oils and fats into an emulsion which can be absorbed by the minute lacteal vessels that have their origin in the small intestine. These lacteal vessels carry the food, now called chyle, through the mesenteric glands and thoracic (chest) duct into a large vein (subclavian) near the base of the neck. In this vein the nutritive matter is mingled with the venous blood, while on its

way to the heart, which, after passing through the right side of the heart to the lungs, is purified and oxidized, and is then sent as *arterial* blood by way of the pulmonary veins and left side of the heart through the aorta and its numerous branches to the capillaries of the entire system, where it gives up its nutritive materials and oxygen to repair the tissues, sustain animal heat and compensate for the waste that takes place by the liberation of physical force or power there generated.

Between the mouth and throat there is a narrow passage called the "Forks," or fauces, where the food passes between two large glands called the tonsils. The office of the tonsils is not definitely known, but they probably pour out a secretion to lubricate the bolus of food as it enters the throat (pharynx). The muscles of the throat (three pairs of constrictors) seize the food as it comes within their reach, one after another, and carry it into the gullet *(oesophagus)* which passes it into the stomach. The food is mixed with the fluid of the stomach by means of the action of the muscular coat of the stomach itself and later with bile from the liver and pancreatic juice from the pancreas by means of the muscular coat of the small intestine and ducts of these viscera. The stomach is frequently found to contain more or less acid (hydrochloric) which is composed of hydrogen and chlorine, and this acid is commonly supposed to be a normal part of the gastric juice. The origin of this acid is, however, at present unknown. It is admitted that it is not secreted in the stomach by the peptic glands of the stomach as once supposed; and must therefore be regarded for better reasons as an *abnormal* product, and the result, as is likely, of the decomposition of substances taken into the stomach as food or medicines. We know, by frequent examinations of matters ejected from the stomach by gases that escape and

by other evidence, that the contents of the stomach are often abnormally *sour* on account of acetous and putrefactive changes which are abnormally taking place in that organ, and which we have no reason to think are necessary to normal digestion; on the contrary, it is generally admitted that the acetous and putrefactive fermentations in the stomach give rise to many *poisonous* products and many untoward symptoms in the body. Hence we may suggest, as a possible way of explaining the presence of hydrochloric acid in the stomach, that it comes from ingesta (or contents) of the stomach (and during the process of *abnormal* fermentation) that contain its elements, viz., chlorine and hydrogen. Hydrogen is always present in the moisture and fluids of the body, and chlorine is one of the ingredients of common table salt, and also of several common drugs that are often administered as medicines. Common salt is not generally decomposed or used up in the body, but is eliminated *as salt* in nearly all the secretions of the body; and in the presence of bodies containing elements having a strong affinity for either of its own elements it may be broken up and new compounds formed.

Another reason why we think that hydrochloric acid is not a normal or healthy constituent of the gastric juice is because it is a *corrosive* substance, and must of necessity be more or less injurious to organic tissues.

When food is not properly selected and prepared or is taken in excess of the requirements of the body the excess, debris or refuse matter is commonly carried, unless of such character or extent as to form obstructions in the canal, the entire length of the alimentary canal and discharged through the valve (ilio-cæcal) at its lower terminus near the right groin into the large bowel (or colon) which forms one of the main sewers of the body for the elimination of waste.

The office of the colon, contrary to the opinion of many physiologists, is quite distinct from that of the alimentary canal. One, the latter, is for the ingestion of food or aliment; the former (the colon) is for the ingestion of refuse matter to be discharged from the body. The diverse anatomical structure of the small intestine and of the colon also points to diverse functions. One—the small intestine—is a small continuous tube or canal having nearly the same diameter throughout; the other (the colon) is not only much larger from its very commencement, but it is sacculated or divided into compartments. One—the small intestine—contains villi in which the lacteal vessels that carry chyle originate; the other contains no villi. Lastly, the colon is not a continuation of the small intestine, but has its origin in the cæcum below the point where the small bowel enters the colon, and between the two is a valve that naturally opens downwards only so as to prevent the contents of the colon, which are excrementitious, from entering the alimentary canal above, which contains *nutritive* material. It is claimed by many that the system can be nourished from the colon in cases of imminent starvation, and that the colon has absorbing power for fluids. This claim we might admit without giving up the idea that the proper office of the colon is excrementitious and not alimentary.

We grant the presence of *lymphatic* vessels in the colon, but not of lacteals; and we also grant that the natural action of the stomach and bowels may in an emergency be reversed as in vomiting, and that the ilio-cæcal valve which naturally prevents the fæcal matter of the colon from entering the alimentary canal, may be unnaturally forced so as to allow the fæcal matter to be discharged through the stomach and mouth; but these cases of emergency are exceptions, and exceptions approve the rule.

The character of the contents of the large and small intestine as tested by the senses is alone sufficient to establish the fact of their diverse natural offices.

We hold, in harmony with the original meaning of the word, that digestion is a *process of distribution* of materials from without to the capillaries in every part of the body, and that the blood vessels and lymphatics of the system are an important part of the apparatus for digestion. For this purpose (digestion) the food material must first of all be broken up or comminuted as thoroughly as possible that it may be more readily dissolved; it must then be mixed with various juices or fluids as *solvents,* not as ferments, and when once dissolved the nutritive material can then be filtered (for this is the right word), through the walls of the villi that beset the free surface of the mucous membrane of the small intestine *into* the lacteals. These latter vessels, sometimes called absorbents, carry the filtered fluid, called chyle, through the mesenteric glands and thoracic duct into a large vein (the left subclavian). The chyle then becomes a part of the fluid that makes up the river of life—the blood, which goes on to its destination in the capillaries, only pausing on its way in the lungs for exchange of important substances, viz., carbon and oxygen.

In the capillaries some portion of the blood containing aliment is taken out of the blood current and left among the tissues, and thus the food having reached all the various tissues of the body, the process of digestion (distribution) ends. Just what takes place in the interstices or lymph spaces among the capillaries no eye hath seen, not even by aid of the most powerful microscope, but it is here that food is assimilated (transformed into the likeness of) or woven into all the various tissues of bone, muscle, nerve, cartilage, elastic fibre, transparent lenses, hair, nails, teeth, different

kinds of membrane, etc., too numerous to mention. Now this process of assimilation is really no part of digestion, but is a mehanical upbuilding by the vital force (or Spirit) that far transcends all human skill. It is a divine Architect that builds and repairs the body, and it is wisdom in man to recognize the source of his strength and safety both in health and in disease.

Animal Heat.

Animal heat is heat that is generated within the bodies of living animals and sustained above the temperature of the surrounding medium in which the animal lives, whether that medium be air, earth or water. Animal heat is due, as is commonly admitted, to a form of slow combustion or oxidation that takes place within the tissues of the animal body. The heat or temperature of the human body, while in a state of health, does not vary much from 98.6° Fah. or 37° Centigrade, though the surrounding medium (the atmosphere) may have, at the same time, a temperature below zero. In disease the temperature of the body rarely varies more than eight or ten degrees above or below the standard of health. In fevers the temperature is high; in cancer and Asiatic cholera it sinks below the normal. All animals, except birds and mammals, are said to be *cold blooded*, because they have feeble oxidizing power.

The bodily temperature of birds is several degrees above that of man. Muscular *exercise* raises the temperature of the body slightly and by aid of the circulation of the blood tends to equalize it all over the body and gives a sense of warmth. The emotion of love does the same. Heat is commonly regarded as a mode of motion or high rate of vibration of the ethereal substance that pervades or constitutes all kinds of matter. The sources of heat, as usually

given, are four, viz.: oxidation, condensation, friction and electricity; but it is likely, however, that all these may be reduced to one, viz.: friction. The degree of heat of the body depends on the degree of tissue activity, and that depends on the nervous power, and that again on the state of the soul. Long continued heat of high degree (113° Fah.) applied to the body proves fatal, and the patient dies of dyspnæa and convulsions; and long continued low temperature proves fatal also.

Cold (a low or freezing temperature) kills by benumbing the sensibilities and stopping the circulation. An equable temperature of 60° to 70° Fah. or about 18° C. for climate and living rooms is the temperature most conducive to health and long life. A temperature of the air much higher than 65° Fah. is debilitating on account of too much rarefaction of the air which diminishes relatively the amount of oxygen it contains, and which is necessary to keep up the activity of the circulation of the blood.

Respiration, circulation and nutrition are the three most potent factors of physical life. These depend, more or less, upon each other, and all depend on animal heat being sustained within a limit of five or ten degrees above or below 100° Fah.

Reflex Action.

This term, as now commonly used in physiology, is improper. It conveys the idea that something is reflected (bent back or turned back) which is not true. The term is applied to the action of a nerve center when it acts *in response* to a sensory impulse received from some other part of the body, but the impulse *received* is not the same impulse that is sent out from the nerve center. A *sensory* impulse is received by the nerve center and a *motor* impulse is sent

out. Nothing is reflected. So we object to the use of this term, not only because it is incorrect, but because it tends to obscure a grand and important truth. The term, automatic (self-acting), would be less misleading, but even that would fall far short of the truth.

There is nothing in nature that is really and absolutely self-acting save the one great cause of all motion; and yet all living things are *said* to act or move of themselves. This is because of the imperfection of human language, which often leads us to confound that which is only relative with that which is absolute. Nearly all words in human language are used in a relative, and not in an absolute sense. Human beings, when not apparently compelled, are said to act voluntarily, *i. e.*, by the exercise of their own wills; but what is called reflex action, is not an act of the will; it is an act apparently of a nerve center (a ganglion) irrespective of the human will, and without any action of the human mind. If we call it automatic, it is because we do not perceive the hand that moves or understand the power that acts.

Some writers reserve the term, automatic, for an act which is performed without any apparent cause; and use the term reflex, for an act performed by a nerve center *in response* to an impulse received through what is called a sensory nerve. Now the entire nervous system of the human body consists of two kinds of matter—grey and white. The grey matter constitutes the nerve centers, where impulses are received and transmitted; and the white matter forms delicate lines of communication between the nerve centers themselves, and also between the nerve centers and other parts of the body, so as to form of the body one harmonious whole. One part of the nervous system (the cerebro-spinal) is presided over and controlled chiefly by the human

will; while another part (the sympathetic, or organic system) is not under the direct control of the human will, but is apparently automatic; which is to say that the sympathetic system of nerves is governed by a hidden force and acts as we say spontaneously. (For a clear understanding of the structure and arrangement of the nerves see the author's illustrated work on anatomy.) The brain and spinal cord belong to the cerebro-spinal (or voluntary) system of nerves, and yet a considerable part of this so-called voluntary system acts spontaneously, especially the grey matter of the spinal cord, and also some parts of the brain. It is these automatic parts of the brain and spinal cord that have given rise to what has been erroneously called "reflex action." There are twelve pairs of nerves that have their origin in the brain, and thirty pairs that originate in the spinal cord. (Physiologists usually count thirty-one pairs of spinal nerves, but we find no good reason for it, and so reckon only thirty.) The spinal nerves have each two roots —an anterior and a posterior root—and each nerve transmits two kinds of impulses, one *to* and another *from* the grey matter of the cord. The anterior root of a spinal nerve is made up of nerve filaments that transmit *motor* impulses *outward* from the cord; and the posterior root is made up of filaments that transmit *sensory* impulses *inward*. Now, when a sensory impulse reaches the grey matter of the cord through a posterior root filament, the grey-matter so reached immediately sends out, along an anterior root filament, a *motor* influence that is entirely different from the sensory impulse received; and this independent action of a nerve center in the spinal cord, or at the base of the brain, in response to a message received from a sensory nerve, which takes place without the mandate of the human will, and without any conscious action of the human mind,

is what has been called reflex action. The acts of winking, breathing, coughing, sneezing and vomiting are generally explained as results of reflex action. A pinch of snuff may be sufficient to excite, without any action of the human mind, all the muscles of expiration, and the air from the lungs is thus forced through the nose. What for? Evidently to expel the offending substance. The end to be accomplished is beneficent, and the same may be said of all automatic or reflex action.

Now the lesson to be learned from this automatic action is that only a small part of the numerous processes carried on in the human body is under the direct control of the human will; and that these voluntary processes must be controlled in the very presence of the supreme architect, whose will is what is commonly known to us as natural law. The circulation of the blood and its ventilation in the lungs; the digestion and assimilation of food; the marvelous powers of touch, taste, smell, sight and hearing; and especially the many and astonishing faculties of the human mind can only be accounted for by recognition of a supreme intelligence that is ever present and acting. We gain nothing by failing to recognize the source of our power. Reflex action, or automatic movements point to the wisdom of the supreme architect of all nature.

The Osseous System.

The bones are the frame-work of the body, and constitute what is called the skeleton. They serve to give form and solidity to the body; to protect important organs; and to form firm attachments for the muscles. They form three great cavities of the body, one for the brain, one for the heart and lungs, and one for the protection of the bladder

and internal organs of generation. These three cavities are known, respectively, as the cavities of the cranium, chest and pelvis. The cranium rests upon the top or upper end of the spinal column; the chest lies chiefly at the front and sides of the middle part of the spinal column; and the pelvis lies in front of the lower part of the spinal column between the hips. The cavities of the pelvis and cranium are limited by bony walls, but the cavity of the chest, which contains the lungs, may be considerably enlarged or diminished by movements of the diaphragm (the floor of the chest), ribs, and costal (rib) cartilages. The diaphragm is drawn downwards when made to contract, and the front ends of the ribs are raised by means of the respiratory muscles of the chest. These motions greatly enlarge the capacity of the chest for the admission of air. (To properly understand these movements of the bones and muscles, some knowledge of anatomy is essential.)

The bones of healthy, well developed persons are stronger than oak timber, but their strength depends largely upon proper food, air, and exercise.

The Eye.

The eye has been called the window of the soul. It is the organ or instrument through which the soul perceives, or becomes acquainted with light, color and forms of external objects. The principal part of the eye is the eyeball, which is also spoken of as the globe, or apple of the eye. The eyeball is protected by seven bones that unite to form and surround the orbit or socket, where the eyeball rests. (See anatomy.) It is further protected by the eyelids, eyelashes, and glands. The lachrymal gland secretes a fluid that

moistens the inner surface of the lids and prevents irritation.

The eye is closed by a muscle (the orbicularis palpebrarum) that surrounds the orbit in front. The muscle is governed by a branch of the facial nerve (the 7th cranial).

The eye is opened by a muscle called the lifter of the upper lid (levator palpebræ superioris) which is governed by a branch of the motor oculi nerve (the 3rd cranial).

The eyeball is turned to the right or left, up or down, by the straight muscles of the orbit. The *external* rectus (straight) that turns the eyeball outwards is governed by the sixth cranial nerve, the other three by the third cranial (the motor oculi).

The eyeball is rotated in its orbit by the two *oblique* muscles of the orbit—the upper, governed by the pathetic (4th cranial) nerve; and the lower by the motor oculi (3rd cranial) nerve.

The cornea, which is the transparent covering of the eyeball in front, permits the light to enter the interior of the eyeball where it passes, first through the aqueous humor and pupil, then through the crystalline lens, and, lastly through the vitreous humor, or vitreous body to reach the retina. The crystalline lens, situated between the aqueous and vitreous humors, is a double convex lens, and serves to collect the rays of light that pass through the pupil into a focus upon the retina. The shape and position of the crystalline lens is controlled by the ciliary muscle, which is governed by a ganglion of the sympathetic system of nerves. This action of the ciliary muscle in regulating the refractive media of the eye so as to adapt the instrument of vision to near and remote objects is known to the profession as "accommodation of the eye."

The iris is a colored membranous curtain or diaphragm, having a central aperture (the pupil), and serves to regulate the amount of light entering the eye. The iris is suspended in the aqueous humor and contains two sets of muscular fibres, circular and radiating. The radiating fibres dilate the pupil, and the circular fibres contract it. The fibres of the iris in regulating the size of the "pupil" are governed by the sympathetic nerves, and are not under the direct control of the human will. The sympathetic nerves of the iris have their origin in a small ganglion or nerve center (the ophthalmic), situated in the back part of the orbit. They *must* belong to the sympathetic system of nerves, for their action is "reflex," spontaneous, or "involuntary."

The *retina* of the eye is the inner coat (or membrane) of the eyeball on which the images of external objects are cast or impressed to be transmitted by the optic nerve to the sensorium of the brain. It is formed by the expansion and most wonderful construction of the optic nerve in the posterior chamber of the eyeball. (See the author's work on anatomy.)

The idea of *solidity of objects* is the result of two separate images sent to the sensorium by the two eyes, one from the right eye, and one from the left. The images are distinct, because any object seen by means of two eyes that are placed in the head two or three inches apart, is seen from two different points of observation. The two images cast upon the retinæ of the two eyes take in something more of the object seen than an image taken from a single point of observation.

The Kidneys.

The office of the kidneys is to secrete and remove from the blood the nitrogenous waste (urea) that comes from the worn out tissues of the body, and other matters that may be in excess, adventitious or foreign; in fact the kidneys are the sinks of the body for the discharge of soluble refuse and waste. The principal substance secreted by the kidneys and held in solution by the water that is filtered through them, is known as *urea*. The amount of urea daily secreted is usually half an ounce or more (200 to 500 grains). The amount of water passed by the kidneys depends largely upon the amount of water and other fluids taken *into* the system, but also upon blood pressure, and the amount of liquids discharged in the form of perspiration or other secretion from any or all the eliminating organs. The amount of water discharged is usually two or three pints daily.

The quantity of urine is increased by copious drinking, by exposure to cold, and by increased tension of the blood vessels; it is dimnished by diminution of blood pressure, by diminution of fluids ingested, by use of salt or salted provisions that increase the density (or lessen the fluidity) of the blood, and by the increased action of other eliminating organs (skin, lungs or bowels). It is known that salt obstructs the process of osmosis (filtering through animal membranes).

The urine generally contains many other substances besides urea. Of these we mention here only some of the more important, viz: salt (chloride of sodium), sugar, uric acid, lime, magnesia, albumin and mucus. The mucus comes from the bladder which is lined by mucous membrane; uric acid is a suboxidized product of urea, and the albumin, sugar, salt, lime and magnesia are contained in

matters ingested as food or drink. In cases of disease the urine often contains other inorganic salts (sulphates, phosphates and urates), and solids (leucin, tyrosin and cystin). These are generally products of decomposition in the system arising from fermentation.

Muscles and Nerves.

The one special function of muscular fibre, wherever it is found, is *to contract* under the influence of nervous energy and thus serve as an instrument to produce motion and locomotion of some part, or all, of the vital organism.

The nerves are *lines of communication* between the nerve centers (the ganglia) and other parts of the body. All these are sufficiently explained in the author's work on anatomy, and in other parts of this volume.

The Eliminating Organs.

The skin, lungs, liver, bowels and kidneys are sometimes called eliminating organs, or better, perhaps, depurating (cleansing) organs, because they secrete or separate from the blood the waste and useless matter that would otherwise very quickly clog and corrupt every channel and part of the body. The skin secretes sweat; the lungs carbon, in the form of a gas (carbon dioxide), mucus and other impurities; the liver secretes bile (a kind of soap); the large bowel (colon) secretes what is called the fæces (dregs), and serves also as a sewer for the alimentary canal; and the kidneys secrete urea, and other waste and impure matters with water to carry off these products. Now, on account of the important functions of these depurating organs they have been for centuries assailed with drugs without other

authority than the *ipse dixit* (he said so) of medical men. Not recognizing the fact that these organs in time of sickness are generally overworked, medical men have searched all the kingdoms of nature for drugs that would stimulate them to increased activity, the result of which, if continued, must be loss of function of these organs, paralysis, and premature death. Diaphoretics (bearing through) were supposed to increase the activity of the skin; expectorants (from the breast) to increase the discharge from the lungs; cholagogues (to lead bile) to excite the liver; cathartics, laxatives and pugatives, to move the bowels; and diuretics to excite the kidneys.

Now, what have these useful and willing organs done to deserve or require so much lashing? They worked till they were tired and needed rest. That was all. They could not carry the load thrust upon them by their human keepers; and the attending physician, instead of instructing the keeper (the human mind) in his reasonable service, proceeds to weaken and exhaust still farther, by use of injurious drugs (injurious to a well man, and so by inference to a sick man), the vital energy. This the human proprietors of these earthly temples would not allow if properly informed.

To prevent clogging of these organs by abstemious diet and sufficient bodily exercise, cheerfully taken, is the cheapest, best and safest course to pursue. Once clogged, the best way to recover the full use of the depurating (or eliminating) organs is to stop at once, taking on any solid food, and make all conditions, so far as possible, favorable for their healthy action. Nothing will better promote the healthy action of any and every organ of the body than the emotion of love; and the *purest* love known to man is the love that extends to the entire human family. Personal

love has also great invigorating power. Exercise of the muscular system especially when employed for the good of our fellow men, or for industrial advantages, is a powerful remedy to unstop, not only the pores of the skin, but the bronchial tubes of the lungs, the ducts of the liver, the glands of the colon, the tubes of the kidneys, and the capillaries of the entire system. All parts yield to the combined power of love and duty, acting in obedience to a sound understanding and a cultivated intellect.

The Senses.

The senses are perceptions of the soul through various avenues that relate it not only to *external* things, but to other or inner realms of being. We may enumerate as senses the following, viz.: hearing, seeing, smelling, tasting, feeling, the muscular, common, moral and the psychic sense. The latter includes all other senses. The senses are diversified not by any diversity of Spirit that knows all things at all times, but by the avenues or organs through which the soul perceives the properties and states of *external* things, and the real nature of *eternal* things. To the common mind the sense (perception) is sometimes confounded with the organ or avenue of sense, but this is an error. The sense is perception of the soul (a self-conscious, individual center of being).

We have each many senses or perceptions, but only one soul to perceive; as a single diamond may have many facets or faces each of which reflects light, as we say, but it is the real nature of the diamond itself that really reflects light; so it is the soul and not the physical organ and not the brain that perceives or senses. The senses as they unfold, one after another, show us the marvelous nature of the soul itself,

which is in its *inmost nature* spiritual, the finite image of the one *universal* Spirit. The perceptions received through special organs are called *special senses.* The soul perceives light and color through a special organ or instrument called the eye; it perceives odors through special nerves that are spread out in the mucous membrane that lines the passages of the nose; through special nerves that extend from the grey matter of the brain to the outer covering of the body the soul receives many perceptions that are grouped together and referred to as the sense of *touch;* through the auditory nerves that extend from special nerve centers in the brain to a wonderfully furnished cavity in the temporal bone on either side of the head known to anatomists as the labyrinth or internal ear, the soul translates vibrations of the outer air into what is known as *sound,* and the attention of the soul to these organs of the body is termed *hearing;* and lastly, through special nerves that supply the surface of the tongue and palate the soul has perceptions of the nature and qualities of objects coming in contact with these surfaces. This latter power of the soul is known as *sense of taste.* The special nerves of *smell* are termed the *olfactory* (smelling) nerves. (They are finely shown in Figures 211, 213 and 217 of the author's work on Anatomy.)

The special nerves of *taste* are the *lingual* (tongue) and *glosso-pharyngeal* (tongue and throat) nerves. The nerves of *feeling* that terminate in the skin have special end-bulbs in the skin called touch-corpuscles. The muscular sense is by some authors included in the sense of feeling. The nerves of *sight* (the optic) terminate in the retina of the eyeballs. The image of objects is greatly reduced in size by the double convex lens (the crystalline) of either eyeball. Opacity of this lens is termed a "cataract." In old age this lens becomes more or less flattened, requiring the use of convex

glasses for seeing near objects well. Flattening of the lens is technically termed "presbyopia" (older sight) or long sight. Short sight is termed "myopia."

The amount of light that enters the inner chamber of the eye is graded by an opening in the curtain (iris) of the eye that is called the pupil. The pupil is made larger or smaller by muscular fibres in the iris that are governed by sympathetic nerves; hence acts of the iris changing the size of the pupil are termed reflex acts. The pupil soon becomes dilated in the dark or by use of belladonna, and is contracted by excess of light or use of opium. The idea of solidity is gained by having *two* eyes that partially surround an object. The special nerves of hearing have their superficial origin in a part of the brain called the harp ("lyra), but their deep origin lies in the back brain and medulla. Want of attention is often the cause of deafness. The soul that pays no attention to anything is, temporarily, a dead soul. *Muscular* sense, if such there be, implies that the muscles of the body form a distinct organ of sense. The sense of weight sometimes referred to as muscle-sense might perhaps with equal propriety be referred to determination of will that causes muscular contraction.

Common sense is perception that is common to all, or at least to the majority of mankind. It is the natural power of the mind to perceive truth by an irresistible impulse or instinctive perception.

Moral sense is nearly equivalent to what is commonly called *conscience*. It is a disposition of mind or soul to be pleased with the true, the beautiful and the good.

Psychic sense is *soul* sense. It is, in modern thought, sometimes called the *sixth* sense. It includes all general sensations and perceptions, as well as all special senses. It

includes powers or faculties that to many persons are entirely unknown, among which we may mention the ability to read or paint without the use of the optic nerves; to feel the physical and mental distress of other persons, even at great distances sometimes; to hear music that is inaudible to the ordinary mind, and to foretell events that we have no means of knowing by the ordinary organs of special sense. To the psychic sense belong all general sensations, such as hunger, thirst and pain.

Histology.

(Tissue Study.)

(Physiologists may find in this article something of interest on coagulation and inflammation.)

The term Histology is derived from two Greek words, histos (web or tissue) and logos (discourse, word, logic, reason or understanding). It is considered chiefly as a branch of anatomy, and is generally pursued by aid of the microscope. The practical study of histology is very interesting and serves to impress upon the mind the wonderful beauty, complexity and marvelous mechanism of the human form. The body, like other organisms, is developed in regular order of succession from the most simple organic form to the most complex. Each change of type in the numerous transformations of the human ovum, or primordial cell, seems to be the result of the fiat, or Word of Supreme Intelligence, Wisdom and Love.

Tissue implies something woven (a web). Now, as usually considered, the body is composed of three primary tissues. These are, first, the cellular, alveolar, or connective; second, the nervous; and third, the muscular.

The cellular tissue is so called because it contains numer-

ous minute meshes, cells or cavities; and for the same reason it is also called alveolar (having small cavities or meshes).

These cells, or spaces, open freely into each other and thus render the whole body porous. The cellular tissue was formerly called "the cellular membrane." The chief use of cellular tissue is to bind parts together (and, for this reason sometimes called "connective tissue") and allow the fluids of the body to pass through them as may be necessary. As the cellular, alveolar or connective tissue is made up of fibres it forms two kinds of fibrous tissue, the white and yellow elastic. The white fibrous tissue forms the tendons and bandages (fasciæ) of muscles, the periosteum, perichondrium, and the connecting ligaments of different organs. The yellow elastic tissue forms the middle coat of the arteries, the true vocal cords, and a few ligaments of the spinal column (the "ligamenta subflava" that connect the posterior portions of the vertebrae). It also forms the ligament of the nape of the neck (ligamentum nuchae) of quadrupeds which supports the head while grazing.

The white fibrous tissue contains also more or less yellow elastic fibres. The adipose (fatty) tissue is only cellular tissue infiltrated with fat.

Bichat speaks of the vascular (relating to vessels, especially blood vessels) tissue, the osseous (relating to bone), the erectile (capable of erection by forcible distention with blood), the mucous, which forms mucous membrane, the serous, which forms serous membrane, the synovial or synovial membrane, the glandular, which makes up various glands, and the epidermous, which forms the cuticle or epidermis of the skin. These are all composed of fibres, or cells, and may be considered as modifications of cells or cellular tissue. With the *fibrous* (which is a form of connect-

ive tissue) there are sixteen *names* of tissues, as follows, viz.:

1. Cellular (or Adipose).
2. Alveolar.
3. Connective.
4. Nervous.
5. Muscular.
6. Fibrous (white).
7. Yellow Elastic.
8. Adipose.
9. Vascular.
10. Osseous.
11. Erectile.
12. Mucous.
13. Serous.
14. Synovial.
15. Glandular.
16. Epidermous.

The ancients had only one elementary fibre from which all the tissues were supposed to be woven. A fibre is a filament or slender thread, and if very fine it is sometimes called a fibril or fibrilla. Each fibre, or fibrilla may be considered as an elongated cell or cells.

The epidermous tissue is composed of flattened cells or scales like the scales upon a fish. The cuticle or scarf skin is epidermous.

The outermost layer of cells that forms the covering or lining of any membrane upon its free surface takes the name of epithelium (literally something "placed upon"). There are three kinds of epithelium (the plural of this word is epithelia), viz.:

1. Squamous, pavement, or tessellated.
2. Columnar or cylinder.
3. Ciliated.

The squamous (scaly) epithelium which consists of flattened cells placed like shingles on the roof of a building, covers the skin (forming the cuticle, epidermis or scarf skin) and lines the blood vessels, urinary bladder, the mouth, throat and œsophagus, alimentary canal to the stomach, and the alveoli and air cells of the lungs. The columnar (made up of rods or columns set on end and close together) epithe-

lium lines the stomach and bowels and the ducts of most glands. The ciliated epithelium has fine hair-like filaments upon its free surface that are in rapid fan-like motion. It lines the respiratory passages of the larynx, trachea and bronchi, the middle ear and eustachian tube, and the uterus and oviducts.

The spheroidal (named from the shape or form of the cells) or glandular epithelium mentioned by some authors is a *transitional* form of pavement epithelium. It is found in the kidneys, ureters, and urinary bladder, and in the secreting glands. It is composed of nucleated cells. The cells of the columnar epithelium are also nucleated.

The nails, hairs and horns of animals are varieties of pavement epithelium, or appendages of the cuticle, or scarf skin. They are the most external of all parts of the body.

The nervous tissue is well described in "Dutton's Anatomy" under the head of Neurology; and the muscular tissue under the head of Myology. Finally let us now consider the *material* source of the fibre from which the tissues of the entire body are woven.

It is generally admitted that the whole organism is constructed of material taken from the blood, since all pabulum taken into the body must be dissolved and enter the circulation before it can be conveyed to parts where it is wanted. Now the blood contains, in solution, one-third of one per cent., or more, of a substance known as fibrin. Under ordinary circumstances, shed blood clots within a few minutes after it leaves the blood vessels, and, under other circumstances, it sometimes clots while yet retained in the arteries, giving rise to what is called thrombosis or embolism; and when it clots the fibrin solidifies and forms fibrils more delicate than the spider's web or the finest silk. Of these fibrils,

variously differentiated, the tissues of the body are woven. The clotting of the blood has been observed in innumerable instances and looked upon as a most wonderful phenomenon, but the general inference seems to have been that it takes place only under abnormal conditions; and not until the publication of the first edition of "Dutton's Anatomy" in 1886 did any author suggest, so far as we are aware, that the coagulation of the blood in the body is a constant and strictly physiological process necessary to the upbuilding of the tissues. In a state of health coagulation does not take place in the blood vessels, for when it does the circulation is obstructed and inflammation ensues, as when the fibrin in the blood is greatly in excess; but it *must* take place in the interstices of the capillaries where the lymphatic vessels have their origin, and whose office is to return into the circulation the serum of the blood plasma which has given up to the tissues its fibrin. Here we have, as we think, the solution of the previously unsolved problem of inflammation, the recognition of the Divine purpose in the coagulation (fibrinization) of the blood, and also an explanation of the pathological condition known as dropsy. In a state of perfect health the fibrin of the blood is used up in the body as fast as it enters the circulation, and the serum (usually called lymph) is returned by the lymphatics into the circulation; but when the blood, by excessive alimentation, is surcharged with fibrin, the vessels become clogged, the blood "sets" (as we say of plaster of Paris, or cheese curd) and we get inflammation, or dropsy, or possibly both.

Elements of the body and number of parts of each, by weight, in a hundred.

Phosphorus	1.15
Potassium (Latin, Kalium)	.026
Nitrogen	2.5
Iron (Latin, Ferrum)	.01
Fluorine	.08
Hydrogen	9.1
Oxygen	72.
Magnesium (Symbol, Mg.)	.0012
Sulphur	.1476
Silicon	.0002
Sodium (Latin, Natrium)	.1
Carbon	13.5
Chlorine (Symbol, Cl.)	.085
Calcium (Symbol, Ca.)	1.3
	100.0000

The initials of these fourteen elements (so-called) of the body, taken in order, give the following for aiding the memory: P. P. Nifhom, SSS, CCC.

Center of Speech.

The *speech center* is placed by physiologists in the lower frontal lobe of the brain, and is frequently called Broca's Convolution.

The Larynx.

In the word "larynx" (the organ of voice) we find the Latin word, *lyra,* which signifies a harp; thus, take the first letter of the word larynx and add the next three letters in reverse order. The larynx (the lyra or harp of the soul) is the most wonderful and the sweetest of all instruments.

Hygiene.

Hygiene comes down to us from the Greek through the French language. This implies that the Greeks and afterwards the French gave earliest attention to this subject. The word hygiene is synonymous with health and is usually defined as *the art of preserving health.* We say *art* because there is so little positively demonstrable as a science compared with the much that is reasonably certain in this useful department of education.

The word health—of Anglo-Saxon derivation—implies a healing, a restoration from disease, a purification, showing how the race has struggled up or is still struggling up, like the pond lily, from the mire of earlier ages through the waters of later civiliation into the purer atmosphere of a more rational life.

Hygiene has for its subject, like all branches of medicine properly taught and practiced, "the fairest fruit earth holds up to its Maker." Nothing that we know in the broad universe is more interesting than man as an individual, and nothing can be more useful than such knowledge or study as will tend to elevate him individually or collectively. Hence education very properly receives a large share of public attention. But the basis of all education is *physical life*—soundness of body—health, hygiene. Without this all effort to educate is futile. We have no manifestation of mind without a brain, no physical power without a body. It would seem, then, to thinking men and women that the first thought would be how to develop *brain and body,* and afterwards direct them to beneficent ends. Yet so limited is the vision of the many, so prone to be guided by what is known as self-interest are the different professions that the

basis of all education, viz.: physical life, is largely ignored in modern systems of education. We shall rise to the dignity of our *human* nature, reach the purer atmosphere of a rational life, only when we *cease to mystify Medicine* and teach the science and art of health in all our public schools. This new departure, which I hold to be inevitable, will doubtless revolutionize our profession, but it will lift it from the domain of quackery (where charlatans dispute the prize) to a region of popular confidence and rewarded merit.

The Hydropathic and the Homeopathic systems of Medicine are only attempts to practice Hygiene under the name of Medicine—attempts to reunite in harmonious union Medicine and Hygiene which are in spirit truly one, but which, by erroneous practice, became divorced. Properly defined and carried to its legitimate conclusions Hygiene would do just what an intelligent medical practice would do—give and do at all times just that which will most speedily and most surely conduct to the soundest health. This in medical practice is not always done. Disease is ofttimes so painful that Hygiene is forgotten or disregarded, and some agent introduced or applied which, while it may or may not always remove pain, is sure to compromise health and sometimes even life. And right at this point the interests of practitioner and patient part company. Quick relief with little regard to consequences, provided injurious consequences be not *too apparent,* increases business; but relief, when produced by narcotics and agents that diminish sensibility, diminshes the patient's stock of vitality. And so it comes about in practice that Hygiene is put to rout just in proportion as pecuniary interest sways and overwhelms the better judgment of the intelligent and conscientious physician.

It is doubtless the privilege and perhaps the duty of every practitioner of medicine to do much, all he can, to prevent disease and sickness; in other words, to teach and practice Hygiene, but as he depends upon the prevalence of disease for business and means of living, he cannot well afford it. If he devotes his life to the prevention of disease and is reasonably successful just in proportion as he succeeds in *preventing* sickness he destroys business and receives no fees. For this reason, perhaps, the lips of the practitioner of medicine are usually sealed on Hygiene. The remedy for this state of society, which divorces the true interests of patient and physician, will be found in public education.

Ignorance of medical subjects alone makes quackery possible; education in this direction will remove it.

Diet.

The whole subject of diet is so difficult and so much abused that many physicians who seem to succeed reasonably well leave the whole question alone and direct their patients to eat just what they please. It does little good to attempt to prescribe a diet unless it be correct and the patient understandingly and cheerfully accepts it. This subject may be treated under three heads, viz.: choice of food, mode of preparation and manner of taking it; or, what and how to cook and eat. The cooking is often so bad that a wag once remarked that "God sent our food, but the devil sent the cook." The best cooking can be simplified to little more than plain boiling, baking or roasting.

All matter or substances must be taken from one or more of the three great kingdoms of nature, viz.: the mineral, vegetable and animal. The mineral kingdom is said to be

unorganized; the vegetable and animal are organized. The vegetable kingdom is the great organizer. Animals feed upon plants and sometimes upon each other. The question of animal and vegetable food has been somewhat discussed, but not settled. We admit that animal food is somewhat more readily assimilated and perhaps more stimulating to the animal functions, but on the other hand we think it is more likely to induce disease. The physiologist has ascertained by experiment that the chyle formed from animal food becomes putrescent sooner than that formed from vegetable food, and for these reasons we are inclined to think that the blood can be purified with more certainty on a vegetable diet. The desire for vegetable food is said to grow more imperative by deprivation and while subsisting on animal food alone; while many persons subsist for many years on vegetable food alone. Our strongest animals—the horse and ox—live entirely on vegetable food.

From the mineral kingdom directly we find only two articles claimed as food—water and salt. Water serves mainly to give fluidity to the blood and other fluids of the body. The uses of salt are less definitely known. Some maintain that it is not a food, but a medicinal agent only. The other mineral elements of the body are found in various vegetable and animal substances used as food. The phosphates are supplied from the cereal grains, and to some extent from animal food. The salts of potash are furnished by vegetables. Fat, starch and sugar are heat forming foods, but more especially fat. These do not contribute so readily to the repair of waste in the system. Of animal substances milk is the typical food, containing all the elements for healthy nutrition.

As supplied in cities, milk cannot be positively recom-

mended. Milk forms the most perfect emulsion of fatty matter known to us and the safest diet in some forms of disease that allow only small calorific and feeble digestive power. It is the most natural food of infants, but unless sweet and pure, may be with advantage replaced by the mucilage of oatmeal, or the prepared gluten of wheat. The specific gravity of milk ranges above 1030. Good milk is one-eighth part cream, and sometimes more than half. Good butter is an excellent heat-giving food, but requires good lungs to oxidize it. Cheese made of the milk unskimmed is both flesh-forming and heat-forming, containing both casein and fat, but it is a highly concentrated food, and does not agree with all stomachs. Eggs taken raw—beaten with milk—or slightly cooked, are wholsome. Boiled three to four minutes, or poached, they are more easily digested than when fried. Custards and cakes containing eggs are apt to disagree with persons of feeble digestive power on account of the hardening of the albumen by excessive cooking. The flesh of animals is largely consumed in many parts of the world, but perhaps more largely in the United States and in England. The Welsh eat less flesh, and in Ireland only one-fifth part of the people eat it at all. (The term "meat" is applicable to other foods also.) Salted meats are less nutritious and less wholesome than fresh foods. Roasting before the fire, boiling or stewing are the best methods of cooking. Frying is more objectionable.

Pork is eaten with greater risk than other meat, and by some nations is rejected entirely. It is often infected by measles, tapeworm and trichinae. Of fowls, the pigeon and the partridge are most wholesome. Of the finny tribe, those taken from fresh water, from the sparkling, running brook, are the choicest. Fish, to be perfectly safe and wholesome, must be perfectly fresh, as they rapidly undergo decomposi-

tion. The safe limit in warm weather scarcely exceeds twelve hours from the water. Many kinds of fish are poisonous, and you will find over twenty kinds of these enumerated in the medical dictionary. Clams and lobsters are to some persons poisonous.

Of vegetable food, the cereals, and especially wheat, stand at the head in importance. A grain of wheat has a hard crust of woody fiber for its outer coat; next a layer of gluten and mineral salts, and the internal structure is chiefly starch grains. The common method of grinding crushes these together and mingles them with the stone dust of the millstones. Bolting separates a portion of the woody fiber and gluten, leaving a part of the gluten and phosphates and most of the starch and stone dust in the fine flour. A process of preparing wheat for food now removes the outer hard crust of the kernel by agitation,or trituration, and rolls and powders the gluten, phosphates and starch, without the use of millstones, and, if we like, separates the starch from the gluten, leaving the latter by itself for tissue-repairing processes of the human body.

Rye and oats are treated in a similar manner and should not be excluded from a well selected *materia alimentaria. Indian corn* is a heavier *food,* excellent for severe manual labor or *heavy work,* but is dropsical and rheumatic in sedentary pursuits. Properly prepared and separated from the cob it is good for the heavy team horse, but spoils the horse that stands much in the barn. The same is probably true of man. Buckwheat is more heating than flesh forming, i. e., it contains more starch and less gluten. The same is true of rice, while rice is more easily digested. Barley is more nutritious than rice.

Beans and peas are rich in starch and also in nitrogenous

matter, and are the proper concomitants of active and severe exercise. The potato is poor in flesh-forming material and is less easily digested than many other kinds of food, but is extensively used, is generally palatable and is reputed anti-scorbutic. It contains only 2% of nitrogenous matter, or flesh-forming material, while beans and peas have 20% and upwards; oats and wheat, 12%; Indian corn, 11%; rye, 8%; barley and rice, 6%.

Of starch upwards of 70% is found in rice, 60% in wheat, rye, oats and Indian corn, and only 18% in the potato. But the potato and other succulent vegetables serve to dilute, when taken in connection, more concentrated foods. Of the fruits, the apple, the lemon, the orange and the grape, are the finest, though the peach and the pear, if fine, ripe and fresh, are, perhaps, more delicious. Of the orange and the lemon the juice is all that is valuable. Pears, unless of the finer varieties, are safest when cooked. Plain stewed apple is a most wholesome sauce.

In eating all kinds of fruit it is wise to carefully separate the innutritious portions and exclude them and not burden the digestive organs with substances not wanted in the system. The sense of smell is one of the most important in selecting our food, and should not be ignored. *Salt* and *vinegar* are useful articles to have upon the table, and may be sometimes taken when the appetite craves them, either as an antiseptic, or to destroy the animalcules that will prey upon waste matter too long retained in the system; but we doubt the propriety of classifying these articles with food. The best beverage is water, but many others are in daily use. Tea stimulates the nervous system and temporarily revives the exhausted. But tea contains tannic acid which constringes the gastric follicles, hardens the albuminoids and

doubtless sooner or later gives a dull hue to the complexion. Coffee contains a less proportion of tannic acid than tea, and may be useful to excitable persons who are liable to quickly exhaust nervous energy; but tea and coffee to be wisely used will be used in moderate strength and quantity, and only, or rarely, except in exhausted conditions of nervous energy.

The best way to prepare coffee is in water near the boiling point, but never above. If the water boils the aroma escapes and the grounds do not so readily settle. Drip coffee is made by percolation. Cocoa and chocolate are mixtures of other substances with the cocoa bean, the seed of a fruit growing in Central and South America. They contain nutritious material, but require long boiling to cook the starchy matter.

Alcohol is an active agent for good or ill, depending upon the manner and extent of its use. It has one property not generally mentioned, which, while it furnishes no excuse for its use in health, does show a reason why it may, like salt and vinegar, be sometimes useful as a medical agent. It is an excellent antiseptic—arrests fermentation and putrefaction, but it hardens all the delicate tissues of the body and for this reason, when taken, should be properly diluted. Crude alcohol contains a fusil oil which always exerts a depressing effect, and must be avoided. The better kinds of alcoholic liquors for judicious use in certain pathological conditions of the body, such as pyæmia, and bad cases of dyspepsia, are deodorized grain alcohol, grape or cider brandy, and rum properly diluted. Gin and whiskey lessen vital action and decrease the amount of carbonic acid exhaled. The habitual use of all alcoholic beverages is condemned. Of late a very poisonous kind of alcohol made from wood has been largely substituted for nearly all kinds of liquors.

A change of climate necessarily demands a change of diet. In the colder regions we need the carbonaceous, or heat-producing foods; in tropical climes, the lighter vegetable food and acid fruits. There would be fewer amyloid and enlarged livers in tropical climates if this was understood.

In eating it is well to remember that we have no teeth, like the fowls, in the stomach, and must make good use of them while the food is within their reach. The nose, palate and tongue are the guardians of the stomach. We must smell, taste and *enjoy* our food. Robust persons with strong stomachs and powerful lungs may eat for a time almost anything in the nature of food with little apparent injury; but delicate stomachs and feeble lungs require wisdom in selecting food. Unripe and very early fruit, decaying vegetables and stale fish, are sure to create gastric, blood or nervous difficulties in the enfeebled. Make life vigorous as possible.

Diet implies, not starvation, as many suppose, but on the contrary, food; it does not imply the denial of any proper gratification, nor the rejection of any proper food. On the contrary, diet implies the use of the best food that can be procured, and in quantities that will best nourish the system and afford the greatest pleasure; for the welfare of the body and of the soul is one and inseparable.

Theodore Clapp, a noted clergyman, who regained his lost health by travel and rough fare without the use of drugs, says: "Proper diet, exercise, sleep and cleanliness are the immutable conditions, not only of physical, but also of spiritual health."

In absence of poisons and merchanical injuries, *our health will be largely such* as our frame of mind, food and exercise, make it. As to the mind, nothing but a *thorough training* in physical, mental and sanitary science can ever qualify it—

unless it be inspiration—for the proper care of the body; nothing but the proper use of the muscles can develop strength, and nothing but wisdom, knowledge and understanding can enable us to properly select, cook and use the best food and drink.

The experiences of the world in regard to necessary conditions of health, including diet, have been lost almost entirely from age to age because the people have been led by misguided teachers to believe that restoration of the sick to health depends upon the administration of drugs and poisons which physicians are supposed to understand, but which the people cannot or must not learn; and thus the people have been for ages deceived. Drugs have no power to heal and are rarely useful, except as palliatives; while proper food, air, exercise, light, deep and full respirations, ventilation, cleanliness, a well trained mind in science as related to physical life, and a true philosophy of being are not only the real remedies for disease, but they are at the same time the only true prophylactics.

Materia Medica is an incongruous expression. It signifies "healing materials." A material is something composed of matter, and matter, if we are to make any distinction between matter and spirit, does not heal. It is the spirit or living force that heals. This spirit, or force, is thought by some persons to inhere in matter. This theory compels us to admit that matter thinks and feels, and yet it seems absurd to say that the brick or stone (which is matter) thinks or feels. Now, drugs are material, but the "modus operandi" of drugs has never been explained or understood. They have no modus operandi; the action manifest in the body is not the action of drugs. Matter, of itself does not move, does not act, does not think, it is inert, it does

not move itself, it does not stop moving, except when made to stop by some agency not its own. Inertia is one of the properties of matter, and matter is the only thing in the universe that is inert. All else is spirit or force. That matter, in its last analysis, is only a *name* applied to the lowest manifestation of spirit does not forbid the use of the term, matter. Matter may serve the purposes of spirit, but so long as matter has the property of *inertia* it cannot of itself act, operate or heal. Science must, then, abandon *Materia* Medica, and substitute therefor ideas, thoughts, logic, philosophy, mental therapeutics. Perhaps Materia Alimentaria will eventually supplant Materia Medica. Very few things are more important than proper food. Life itself, human life, cannot be maintained without it. Air and water are essential to life, but these belong to our Materia Alimentaria. They supply materials for use in the body.

The term "Digestion," which is so often used in medicine, is also misapplied. It is considered by the profession a process of fermentation, not by organized ferments, but by what is called unorganized ferments. What an unorganized ferment is nobody has told us. The term is used, says Parr (see Parr's Med. Dictionary), without any scientific discrimination. Now, what does digestion mean? It comes from the Latin and signifies literally "to bear apart." It may apply, indeed, to the process of solution, but it applies equally well to the process of distribution.

If the atomic theory of chemistry be true, then a solution can be nothing more than a separation of the ultimate atoms; for the atoms are supposed to be indivisible. But the atomic theory is incompatible with natural philosophy, which ascribes to matter the property of divisibility. So far as we

know, all matter is divisible, and its divisibility is limited only by the imperfection of our instruments and limitation of our senses. And if the atomic theory be not true, then a solution of matter is not a proper definition of the term digestion. The matter of a solution is not "borne apart," but is brought into a more perfect union of one substance like all spiritual things. But the word distribution does imply a separation or digesting, and hence distribution may be considered the true meaning of the term digestion.

The food to be digested is first comminuted or broken up in the mouth, which is the first step towards solution; it is at the same time mixed with the saliva, which may better be called a solvent, perhaps, than a ferment. The food next passes into the stomach which is a dilatation of the alimentary canal, or temporary receptacle for food.

The stomach secretes from the blood another solvent, viz; the gastric (stomach) juice. Just below the stomach the food encounters two other fluids—the bile from the liver and the pancreatic juice from the pancreas. These are also solvents, but of different nature. Each is a solvent of some particular kind of food. The saliva makes starch more soluble; the gastric juice has more effect upon matters containing albumen and nitrogen; the bile is a kind of soap that neutralizes strong acids, and the pancreatic juice attacks the fats and oils.

Now what can be gained by calling these secretions ferments? The term ferment, in this connection is misleading. It is liable to be confounded with that process of decomposition (fermentation) which is pathological, a process of decay. And to call these secretions ferments adds nothing to our knowledge. We do not know what an unorganized ferment is. We do know what a solvent is. Let us then

call these digestive fluids solvents, for we know that solution favors absorption. The food must of necessity be dissolved or emulsified before it can be taken into the circulation of the blood, and until it is taken into the circulation it cannot be distributed or digested. It is digested (borne apart or distributed) only when it reaches the capillaries where it is needed for purposes of growth or repair, or to be oxidized for the production of force and animal heat. Digestion implies distribution; it does not imply fermentation. And if digestion is anything more than mere solution, it is not performed in the stomach nor in the alimentary canal, but by the blood vessels after the alimentary material enters the circulation. It is important therefore to remember that *soluble matter alone is capable of being digested.* All other matter that enters the alimentary canal must be carried its whole length by muscular action and emptied into the colon to be discharged from the body, or otherwise it remains to produce disease.

It is supposed by physiologists that hydrochloric (muriatic) acid which is often found in the stomach, is necessary to digestion. If it were so then most likely it would be a normal secretion, but late experiments seem to show that it is not a normal constituent of the gastric juice. It is found only at the free surface of the stomach lining and not in the glands of the stomach. It is not found in the stomach during a protracted fever. "Charles Richet has made a series of experiments by which he finds that during fasting, the gastric secretion is hardly at all acid, and in some instances may even be alkaline. During fasting, there is mucus but no acid in the stomach; but the moment when digestion begins, however, by irritant action of alimentary substances, a determination of blood in the walls of the stomach is excited, the mucous membrane reddens, and drops of juice ooze to

the surface. The acid is found at the surface of the membrane (as proved by Claude Bernard) while the subjacent cells have for their role the secretion of pepsin." These facts point to the conclusion that hydrochloric acid is *ab*normal and not physiological in the stomach. As adventitious matter its presence may readily be accounted for. Its composition is HCl. (Hydrogen and Chlorine.) Now chlorine is one of the elements of common salt, and hydrogen is found abundantly in water. It is highly probable, therefore, that the presence of salt in the stomach is sufficient to give rise to this acid. But other salts are often given as medicine, viz.: salts of mercury, that contain chlorine. These may also be the source of hydrochloric acid in the stomach. Now this acid is said by high authorities to aid digestion, but this may be a great mistake. It is escharotic and in concentrated form destroys the mucous membrane with which it comes in contact. Instead of aiding digestion it may be the immediate cause of canker sores and ulceration of the stomach, especially when found in connection with mercury. Chlorine and mercury are the elements of corrosive sublimate.

Common table salt is supposed to be necessary to healthy digestion and is commonly reckoned among articles of diet. On the contrary it is no doubt detrimental to the normal process of digestion. In abnormal or unhealthy conditions of the stomach salt may be useful as a medicine, but a medicine cannot be properly reckoned as an article of diet. Medicines are useful and proper only in sickness.

The process of digestion requires first, the solution or emulsion of all food not already liquid; second, the absorption of the food through the mucous membrane of the alimentary canal. Now salt is known to interfere more or less with absorption (osmosis). It has been proved by direct experiment that fresh water passes more readily through

animal membranes than saline fluids. We know by long experience that salted provisions used largely or exclusively, as in voyages at sea, give rise to scurvy, salt rheum and other forms of cutaneous and constitutional disease. Salt is antiseptic, and in certain abnormal conditions may be useful as a medicine, but it is not a food, and under strictly normal conditions is not only unnecessary but injurious. In cold climates it is probably less frequently needed than in hot climates. In North Siberia we are told no salt is used. It shrivels the corpuscles of the blood, hardens the tissues of the body and interferes more or less with the processes of absorption and secretion.

The question of *animal* food is still an open one, though we are tending no doubt towards a vegetarian and frugivorous diet. We know that animal food undergoes fermentation and putrefactive changes more quickly in the alimentary canal, and for this reason is more liable to corrupt the blood and bring on disease than food from the vegetable world alone. We cannot detect poison and disease in animal bodies with the same certainty that we can in food from the vegetable world, and are therefore more certain of health when living on vegetable food. Persons who eat no animal food are *rarely*, and some say *never* troubled with rheumatism or dipsomania (madness for intoxicants). Swines' flesh was forbidden by the Jews, and is undoubtedly a leading cause in the production of scrofula and cancer. Two other forms of disease at least, that affect man have been traced to the eating of pork—measles and trichinosis; and from the cysticercus which accompanies measles is developed the tapeworm. We see no reason for eating pork if we can obtain other and better food. Some people have an idea that animal food is necessary to keep up the strength, but many of the strongest animals—the horse and the ox—never taste

animal food. The writer has known personally two strong men who lived and worked hard all the time, and constantly improving in health, one for ten years and the other for fifteen years on a purely vegetarian diet.

Many persons would never slay to eat if they could obtain other wholesome food. The spectacle of the slaughtering of animals is not one that delights any of the senses; but nice fruit and growing things are pleasant to every sense. The laws of our being are unitary; they all conspire to one end—the progress and happiness of the race; and whatever, under normal conditions, harmonizes with our being, and delights the senses (unchanged by erroneous habits) tends to the good of all. We need to use at least three of our senses, and there is no reason why not all, in the selection, cooking and taking of our food. It should first of all be pleasant to the sight. Tried by this test the animals would not perhaps be chosen as material for sustenance unless as a matter of necessity, certainly not the hog. Food should regale the olfactory nerves. If food is pleasant to sight and smell we may then bring it to the test of the taste, which must be final. If the taste rejects it, even though it passes the guards of sight and smell, food is not to be swallowed. Pleasure should accompany every act of life, and most certainly the act of taking food. On the score of economy a vegetarian diet would certainly take precedence.

The great Swedish naturalist Linnæus, Baron Cuvier, the great French naturalist, and Prof. Bell of Guy's Medical College, London, all agreed that man is *naturally a frugivorous animal;* and history shows that large portions of the human family have in past ages subsisted almost wholly upon vegetarian food. The Brahmins, numbering more than 100,000,000, religiously abstain from animal food. Animal food has a tendency to produce the gouty and rheu-

matic diathesis—acidity of the urine. Dr. Carpenter, an eminent English physician and author, says, "A well selected vegetable diet is capable of producing the highest physical development." W. M. Cornell, M. D., LL. D., says that "no person should live on animal food alone. . . . It lays a foundation for inflammatory diseases, tends to produce a putrid diathesis, and to bring on putrid diseases. It also has a bad effect upon the mind, producing peevishness, fretfulness, and an irritable disposition."

Foods are commonly divded into two classes—those that contain nitrogen (called *nitrogenous or albuminous)* and those that do not *(non-nitrogenous food)*. The food containing nitrogen affords material for building up the tissues, and *non-nitrogenous* food supplies animal heat and muscular force, or energy. There must be a due supply of each for the best health. A supply may be found in either the animal or vegetable kingdom. We have nitrogen in the flesh of animals and nitrogen in fruit and vegetables. We have animal oils, and we have also vegetable oils. We can take our choice. And there is another class of foods which we must not forget, viz.: *animal products*. Eggs, milk, butter, cheese, cream and honey are not flesh, but animal products. They may be used as food without taking animal life; and many who are called vegetarians make use of them. To exclude from the diet fish, flesh and fowl—the three "fs"—is sufficient to remove many objections that lie against a flesh and blood diet. *Nitrogenous* food is more generally known as *albuminous food,* or simply *albuminoids*. The latter term signifies *resembling albumen*. The white of an egg is nearly pure albumen. Cheese is rich in *casein* (an albuminoid). The *gluten* of wheat is also an albuminoid.

Non-nitrogenous food is divided into hydrocarbons and

carbohydrates. Hydrocarbons include the oils and fats, carbohydrates include sugar and starch. About 70 per cent. of wheat is starch, and 10 or 11 per cent. is *gluten* (an albuminoid). Starch contains no nitrogen; gluten does. The *outside* of the wheat kernel is woody fibre (cellulose) which is insoluble, and is removed by means of trituration in the new process of making the best flour. Good wheat bread eaten with milk, butter or cheese, will very well supply the entire body. Oatmeal and Indian corn both contain more *oily matter* than wheat, and are therefore *more heating* in the system. They are good for *heavy work,* and whenever fuel for animal heat is needed, but not for sedentary employments. Oatmeal is heating, but Indian corn is still more so. The trotting horse will soon be spoiled if kept standing in the barn and fed on Indian corn or Indian meal, or Indian meal and hay; but the *heavy team horse* can work off two or three quarts of Indian meal at each feeding. For *light* muscular labor, or *sedentary* employment for man, wheat and rye are preferable to oats and maize. Rye meal should be *newly ground* and stirred slowly into *boiling* water to make a nice mush. Eaten with nice milk or sweet cream rye mush is delicious.

The albumen of the egg becomes considerably hardened by cooking, and is thus made more insoluble in the digestive fluids. For this reason it is better as a rule to take eggs *raw*—beaten with a little milk—or *slightly cooked,* and as a rule it is better not to use eggs in *baked* food. For the best health all food must be fresh and *free from putrefactive changes.* These precautions are much more necessary to invalids than others, but useful for all. In infancy and youth *while the body is growing,* there is need of more nitrogenous food

(albuminoids or proteids), and less carbon (fat, starch and sugar). This accounts for many sickly or feeble children. There is a mistake in feeding. Fat, starch and sugar are *non*-nitrogenous (carbonaceous) foods, and although they give birth to force and heat, when the tissues are otherwise properly nourished, they do not give birth to *tissue building*. *Bread and milk* supply not only building material for the tissues, but the *starch* of the wheat and the *cream* (oil) of the milk supply also material for force and heat.

Eggs, cheese, peas and beans, are all rich in nitrogen (tissue-building material). The *albumen* of eggs, the *casein* of cheese and the *legumin* of peas and beans are all albuminoids, or proteids (nitrogenous food). The term proteid, comes from a Greek word and signifies "to be first" because it occupies an important rank in our food. It was the idea of Mulder that the albuminoids, or proteids, were first formed *in the vegetable* before they were appropriated by the animal. Plants derive food directly from unorganized matter; animals from that which is organized.

Man *can live* upon *organized* matter, whether found in plants or animals. Lean meat abounds in an albuminoid known as *fibrin*. Animal fats abound in carbon, which is used in the system for heating purposes. In cold climates more carbonaceous matter is required to keep up the animal heat; in warm climates less carbonaceous matter (hydrocarbons) is required. People who change climate should change their food accordingly. In hot climates we need less butter and sugar, because we need less fuel for animal heat. Sugar and starch are abundant in the vegetable world; they are scarcely found at all in the animal. If we need animal food for anything it is only for albuminoids, or proteids (nitrog-

enous food), which are also abundant in the vegetable kingdom, but we may not know where to find them among vegetables unless taught.

Persons who desire to become vegetarians will find it helpful to use some milk, cheese or eggs while making the change. These will readily supply the needed albuminoids. Fresh fish may also be retained as part of the diet for a while, if necessary. Whole wheat meal bread, or *brown* wheat bread is rich in gluten (a tissue-builder). The white bread contains less gluten and more starch (carbonic food) than the brown wheat bread. One great reason why people eat too much is because they do not get the right kinds. If a dish is deficient in proteids to nourish the tissues an *excess* of the largely non-nitrogenous food must be taken in order to get the necessary amount of *nitrogen*. A wise selection is necessary, and how can one select till he understands these matters? Right here in regard to our food is where the medical profession ought to be of great service to us. We must pay them *for teaching*, and all become students. The world will be the better for it.

If food is properly cooked, is *unmedicated*, and well eaten, and is also well used in an active and vigorous life, the *appetite* will be a more or less natural guide in our selection and use of food; but the reverse of these conditions spoils the appetite. A *little food* of the *right kind*, adapted to the wants of the system completely satisfies the appetite; while an excess of starch or carbonaceous food clogs the system and still leaves the appetite unsatisfied.

The next erroneous custom that we feel it our duty to mention here is the use of soda and baking powders. The bases of these preparations are the alkali metals, largely so-

dium and potassium, though alum and ammonia are also used. The alkalies are all destructive of organic tissue, and there is little, if any, doubt, of the fact that the *premature decay of the teeth* is largely due to the use of soda, saleratus and baking powders. Mercury, when used, of course, contributes its share to this work of destruction. But the loss of the teeth is not the only mischief; dyspepsia, with its innumerable train of ills and suffering is due in great measure, as we believe, to these destructive agents. Gout, also a near relative to rheumatism, is largely dependent upon baking powders for material (urate of soda) to deposit around the joints of the gouty fingers and toes. We can no doubt abandon the use of soda, saleratus and all baking powders with great advantage.

Fermented bread is not particularly objectionable, provided it is properly made of fresh yeast and not allowed to sour. It should be *well-baked,* and *before* the process of fermentation has reached the *acetous* (sour) stage, which is a process of decay. Good bread-making is one of the fine arts, and to master it is, as we regard it, more of an accomplishment than to play the piano. The whole wheat, deprived of its cuticle (or cellulose) and crushed by rollers, and not ground by mill-stones makes the best flour or meal.

Dough and lard, or fat of any kind, *mixed* with dough and baked, form an incongruous compound not suitable for the human stomach. The fat cannot be emulsified in the stomach, because the pancreatic juice (tripsin) does not reach it there, and the gluten of the dough, which is naturally dissolved by aid of the gastric juice *in the stomach,* has to be smuggled through the pylorus into the duodenum below, before it can be liberated from the fat or lard in which it is encased. The result is constipation and dyspepsia. No

pie crust is ever quite so wholesome as plain bread, and 'tis only a pampered and abnormal appetite that craves it.

For the same reason that fatty matters are not emulsified or dissolved in the stomach, but only in the small intestine in connection with the pancreatic juice and bile, all *fried* foods are somewhat less wholesome than when broiled, boiled, baked or roasted before the fire. *Burnt* fat is specially objectionable on account of an acrid empyreumatic oil known as acrolein, that is developed by burning. Food must be adapted to the requirements of the body, as interpreted by the intelligence of the individual and the appetite or emotions of the soul. There are no cast-iron rules for diet other than this: Be loyal to truth and seek earnestly to know what will conduce to your most perfect health and greatest happiness. It is worse than useless to try to regulate your life by arbitrary rules that your inner self or soul does not sanction. Seek to know the reason and the right of things, and what you *really* know to be the better way will be very easy for you to pursue.

Socrates maintained that man could not know virtue and not practice it. He may be told the right way, but he does not know it *as it is* till it so impresses him that he desires to pursue it. The appetite is a good guide for us when we are always loyal to truth, and free from bad habits; but doctors, and cooks, also, are large factors in preserving health or causing disease, as the case may be. One facetious writer remarks: "God gave our food, but the devil sent the cook." The cooks and doctors are after all what the people make them. The doctor will serve us well if we pay him well for teaching and refuse to take his drugs. To preserve our health, we need knowledge and understanding, not drugs. The cook will take much greater pleasure in preparing us

wholesome dishes if we are pleased with them. The matter of food and health rests with ourselves as a people. *Vox populi, vox dei.* (The voice of the people, the voice of God.) Not the *populace,* the common crowd, impelled by passions heated under long misrule, and a sense of injustice done; but the best writers and speakers and the inner promptings of the great heart of humanity, are divine. Let us banish as did Rome in her palmy days, drug doctors and bloodthirsty surgeons from our midst, and become once more possessors of ourselves. We want to know what to eat, how to eat, and how to cook. We want to know our own matchless frame, and how to use it wisely for a hundred years without a failure or a pain.

This matter of teaching is a work for a doctor (teacher) that is worthy of his calling, a highly honorable and most useful occupation, and a delightful one withal. To banish all secrecy in drugging or prescribing will greatly promote the interest of the people. Secrecy is the soul of quackery. The healing art is now buried in two dead languages (Latin and Greek), besides many terms derived from other languages. Its boasted knowledge is largely assumed. It is puffed up with pride at its great learning, but its practice is, so far as healing—curing the sick—is concerned, largely *pseudo*-science. It is like the man whose neighbor said to another concerning him: "You would be surprised to see what an amount of ignorance that man does know." Crude and dangerous theories in medicine often pass for facts. It is surprising, even to a physician himself, to become really acquainted with the great number and deadly nature of the poisons now used in the treatment of disease whose cause is not generally understood. Chemistry is all right in the arts, but the human stomach was never intended for a crucible. It is not Wedgewood ware. "God never made His works for

man to mend." The Healing Power is *always present,* and conditions only are wanting to restore the sick to health. What those conditions are in true science it is the province of the teacher to explain.

Fames est condimentum optimum (Hunger is the best sauce). This maxim from the old Roman is worthy of being treasured in memory. Tonics, stimulants and condiments hurry us on to destruction. *Time,* cheerfulness, open air, and exercise will always, *in good time,* bring back lost appetites, and bring no pain with them. Condiments excite and irritate, and irritation is the first stage of disease.

A little salt may be taken when needed as a medicine or antiseptic; and a little nice cider vinegar, a spoonful or two as an antiseptic, may at times be useful; but pepper, especially black pepper, is an incorrigible irritant, and if often used will surely, sooner or later, induce disease of the stomach and bowels. Ginger at first is grateful to the *flagging* powers, but frequently used brings disappointment and pain. The *normal appetite* will discard, as a rule, pepper, ginger and all spices. Colic, constipation and hemorrhoids are some of the most common results of the frequent use of condiments. What are these things made for? is sometimes asked. Well, if we do not know, we had better leave them alone until we find out, unless we wish to experiment upon ourselves for the good of others. So far as experiments have been tried with condiments, the evidence is that they do not promote health and longevity.

In the cooking of food it is important to know the reasons for our action. The boiling of meat and eggs hardens and coagulates the fibrin or albumen. For this reason lean beef or meat intended for tea or soup should be put into *cold* water and cooked by raising the heat to a temperature 15 or

20 degrees *below* the boiling point; while meat to be boiled with the juices preserved in the meat may be put into *boiling* water and boiled for five minutes to coagulate the fibrin upon the surface and retain or confine the juices; and then cooked till tender at a lower temperature (190 to 200 degrees Fah.)

Coffee and tea should not be boiled, because boiling extracts more of the tannin (a strong astringent). The best coffee is made by pouring boiling water upon the *freshly ground* coffee and allowing it to percolate through the coffee. This is called "drip coffee." Tea and coffee, even when pure, are *not suitable* for a *common beverage.* It is better to reserve them for certain exhausted conditions of the system. "Dr. Mendel, of Berlin, Prussia, has lately published a clinical study of Coffee Inebriety, which is growing rapidly in this country. The leading symptoms are profound depression of spirits, and frequently headaches, with insomnia. A strong dose of coffee would relieve this, for a time, then it would return. The muscles would become weak and trembling, and the hands would tremble when at rest. These symptoms constantly grow worse. The face becomes sallow, and the hands and feet cold, and an expression of dread and agony settles over the countenance. In all these cases acute inflammations are likely to appear at any time. An injury of any part of the body is the starting point for inflammations of an erysipelatous character. Many opium and alcoholic cases have an early history of *excessive use of coffee,* and are always more difficult to treat." *As a medicine or antiseptic,* coffee may be sometimes useful. It is also considered by some an antidote to opium. "Professor Heim has demonstrated by experiment the powerful antiseptic properties of roasted coffee. He shows that caffeine is death to micro-organisms, that infusions of animal matter in coffee

may be exposed to the air without gathering mould, that the bacilli of cholera cannot live in coffee, and that under its influence the microbes generated in pus perish. Good effects have been ascribed to the use of coffee in cases of typhoid fever. These effects have been attributed to its tonic power, but it now seems that such results are laregly due to its antiseptic properties." To the same degree, however, that coffee has antiseptic properties it is poisonous. The *caffeine* (identical with *theine*) which it contains (about 2 per cent.) is a cerebral stimulant; i. e., it tends to produce to some extent congestion of the upper brain, and for this reason is called a restorative. In addition to this stimulating property, tea and coffee both contain an astringent substance that more or less interferes with digestion and tends to produce constipation.

The tannin (tannic acid) of tea and coffee used as a beverage, sooner or later *tans the skin* of a dingy, sallow color, and produces obstinate constipation, while the effect of the stimulating property (theine) is to induce headaches and general debility with nervousness, insomnia and palpitation of the heart. If used at all, let tea and coffee be carefully prepared *without boiling*, and taken only in limited quantities. A small cup of tea or coffee taken occasionally in certain exhausted conditions of the system may be admissible, but *not as a common beverage*. For fasting, watching or before exposure to damp, cold weather, a cup of warm tea or coffee may be useful. Tea taken as a beverage is much worse than coffee, for several reasons. It contains more tannin (25 per cent.) and also more of the intoxicating substance known as *theine*. Still another reason that it should not be used is, that it is largely adulterated and colored with various injurious leaves and poisonous mineral matters. No person can drink tea habitually, the ordinary imported tea of

commerce, and preserve his health. It is said that Chinamen in this country will not drink the tea imported for American consumers. It is unsuitable. The chronic effects of tea upon the human system are now well known by its effect upon "tea tasters," a class of persons employed by importers of tea. Let me repeat them. Congestion of the front brain, cold feet, vertigo, dyspepsia, headache, mental depression, constipation, and insomnia. Let young persons especially be warned and protected from these evils. A peculiar headache discovered by the author and traced invariably to the use of tea as a beverage, may be known as *tea headache.* It affects the *frontal lobes* of the brain and may be described as a radiating or *stellated pain* like a star *in the forehead,* not continuous, but sharp and shooting.

Diet Tables.

No. 1. Articles easy of digestion for infants and invalids. Good milk; sweet whey; toast water; the *juice* of nice ripe fruit, as that of watermelon, grape, apple, or orange; thin oatmeal gruel, cooked well and strained through muslin or a fine sieve; and pure water to give fluidity to the blood.

No. 2. For sedentary persons with light employment. Good bread of wheat or rye, made with fresh yeast and well baked (that made from the whole-wheat meal is best); rye mush, made by stirring rye meal (not flour) into *boiling* water; sweet cream; fresh raw oysters with lemon juice instead of vinegar; a fresh raw egg beaten up with new milk; a nice baked potato with cream; milk, butter and sugar in moderate allowance; good cheese, occasionally, but rarely; nice ripe fruit (apples and pears unless of the finer varieties and fully ripe are better cooked); onions well cooked; parsnips (best in the early spring after remaining in the ground

all winter); beets when nice and tender; cauliflower; lettuce; winter squash; ripe tomatoes; rice (boiled three hours in a farina boiler); and, if animal food is desired, beef, lamb or mutton, fresh fish, especially cod, haddock, trout, turbot, sole and salmon, and of fowls, chicken, turkey, partridge, quail and woodcock. For drink, water, lemonade (made at home, or by your own hand), milk, or the juice of fruit. Masticate thoroughly and reject all hard and insoluble matter. Much sugar will make the blood too heavy, and an excess of fatty matter (more than can be oxidized by the amount of air inhaled) will clog the circulation.

No. 3. For laborious employment. Oatmeal and cream; bread and meat; bread and cheese; corn cake, rye and Indian bread; baked beans; peas; potatoes; cabbage; and all articles in table No. 2.

No. 4. Articles difficult of digestion. Eels; crabs; clams; lobsters; chestnuts; hard, old and rancid cheese; salted meats and salted fish; all *fried* foods; pie crust and pastry; hard cooked eggs; baked meats containing any burnt fat (on account of the acroleine developed); dumplings; pickles and preserves.

No. 5. Articles not to be eaten when more wholesome food can be obtained. Pork or lard; soda, and all baking powders; black pepper; salt; spices, and all condiments; pie crust; salted meats and salted fish; and vinegar. Salt and vinegar are antiseptic, and may be properly used *as medicines* if necessary. They are not foods.

For Diabetes.

No. 6. *May use* brown wheat bread (the whole wheat, or gluten bread), and a small allowance of butter, or sweet

cream; lean and tender lamb or mutton (boiled or broiled); fresh fish; raw eggs beaten in a little milk; lettuce; boiled onions; cauliflower; parsnips; baked and stewed apples; and *occasionally* a baked potato. Drink water, buttermilk or lemonade. *Avoid sugar,* syrups and honey; all starchy food, such as rice, sago, and, as a general thing, potatoes; and all fatty matters, except a *little* butter, or sweet cream.

Bright's Disease.

No. 7. *May use* milk (be sure of having pure milk, or else substitute *condensed* milk); brown wheat (or gluten) bread; stewed apple; the juice of stewed prunes; rye mush (stir the meal slowly into *boiling* water) and milk; the juice of grapes, oranges, or lemons; and a little sweet cream.

Avoid strong coffee and tea (it is better to use none); avoid all alcoholic stimulants, pork and tobacco.

Gout.

No. 8. *Avoid* all alcoholic stimulants, tea, coffee and soda, and all baking powders; and all fermenting foods and drinks (anything liable to produce fermentation in the stomach and bowels). Use sugar very sparingly, if at all. Sugar favors, or hastens, fermentation.

Rheumatism.

No. 9. Same diet as for Gout.

For Constipation.

No, 10. May use rye mush, or rye bread, baked apple,

cream or milk, stewed apple, boiled onions, parsnips, cauliflower, the juice of oranges, lemons, grapes, and other nice fruit in its season. If animal food is taken, let it be fresh fish, beef, mutton or wild game.

Avoid all salted provisions, all dried foods, all pastry, and fried foods, condiments, and baking powders.

Remarks.

The food must be adapted to the wants of the system and taken in proportion to the amount of physical exercise and temperature of the climate. Cold weather requires more carbonaceous matter, such as fats, oils and sugar. They are required as fuel to keep up the supply of animal heat; but an excess of these leads to obesity, plethora and fatty degeneration of muscular tissue, especially when little exertion is made to keep up the tone of the muscles.

"Observe with gratitude the taste, the flavor and the odor of everything you eat; and eat nothing unless the flavor and odor are wholly congenial. The habit of thinking upon foreign subjects while partaking of food is sin. Convert every meal into an act of worship."

Development of the muscles by judicious physical exercise and the use of plain and wholesome food is an infallible cure for sick headache and dyspepsia. Rice, wheat or barley cooked for four hours and eaten with cream, milk or nice fruit are healthful dishes.

Hints.

1. Reject everything offensive to sight, smell and taste. This hint ought to save the inquirer from all food bordering

on putrefaction. Let every thing be fresh as possible and pleasant to every sense.

2. A vegetarian diet properly selected is safer than animal food. Persons who use much animal food are more subject to inflammatory and zymotic maladies. Some animal products—eggs, milk, butter and cheese—may sometimes be allowed with vegetarian diet.

3. Fresh provisions are much better than salted provisions.

4. Reject everything that will not dissolve in the mouth, stomach or alimentary canal. This hint may save you lots of trouble. Reject the skins and seeds of fruit, the hulls of grain; the scales, bones and gristles of fish and animals; the cellulose, or woody fibre of all plants, etc. All food must be dissolved before it can be taken into the circulation.

5. Take no more butter, fat or greasy food than you can oxidize in the system. If you have small and weak lungs you cannot use much carbonaceous food. Starch, fats and sugar are carbonaceous food.

6. Peas and beans are rich in nitrogen and are apt to cause flatulence, especially if taken in excess.

7. Soda and all baking powders may be wisely abandoned or relegated to the medicine chest. Raised bread is to be preferred. Let the yeast be fresh or newly made. Persons of sedentary employment should prefer rye, wheat and barley to oats and corn. The latter are good for those occupied at hard labor.

8. Cook all fruit that is not ripe and mellow.

9. Eggs raw, or barely scalded, are more digestible than when cooked.

10. Select potatoes that are ripe and mealy.

11. Avoid as a general rule all artificial stimulants and condiments.

12. Seek an appetite at exercise in the open air, and not in the medicine chest.

13. Do not crowd the appetite.

14. Pure water is the best drink. Lemon juice and water is wholesome, especially in fevers. Milk, butter-milk, and sweet whey are also wholesome.

15. Simple, plain food is better than mixed dishes. Let the food wait upon appetite.

The pure juice of fruits, especially that of ripe apples, pears, peaches, plums, apricots, melons and grapes, when fresh and uncontaminated, is a most healthful liquid to give fluidity to the blood.

Air, food, exercise are three great factors of a healthy life. We can with great certainty reduce inflammation by simplifying and regulating the diet. We do not believe in starvation, hunger or thirst, but in satisfying, rather, every natural want. Keep comfortable always; and when the blood is crowded with fibrin and the system with waste, it is wise to reduce both, not with cathartics generally, nor by the abstraction of blood, as of yore, but by exercise (sometimes rest, as in cases of mechanical injury), in connection with temporary fasts, and simplification of food. You will be surprised at the result.

The food must be graded to the work performed by brain, or muscle, either, or both; and a natural appetite is the best guide. It is quite possible to take an excess of food, even to an uncomfortable distention of the stomach, without satisfying the appetite. This arises from an unwise *selection* of food. Potatoes, fine flour and other starchy foods

will not fully satisfy the tissues of the body. They require for their growth what is called nitrogenous food, which is found in brown (Graham) bread, lean meat, milk and eggs, fruit and nuts. It is well to keep out of the system everything not needed for the various purposes of the animal economy. As to excess of food, an increase of muscular activity and prolonged physical exercise is the best way to use up any surplus.

Preparation of Food.

Wholesome cooking is one of the fine arts. Its general principles should be a part of every person's education. Animal food may be roasted before the fire, boiled till tender, or broiled over a bed of coals, but on no account be allowed to burn at any part. Burning, whether by frying or baking, or any other way, develops a peculiar acrid and disagreeable substance known as empyreumatic oil. Anything burned is killed or destroyed more surely than in any other way; and burnt food is much worse than no food at all. For this reason frying is objectionable. Beef, mutton, and some kinds of fresh fish are, in general, the better kinds of *animal* food. To kill and eat a hog, or any part of it, can be approved by rational men only on the ground of dire necessity. The only question is, can other food be obtained? Fresh water fish are best, if cooked and eaten very soon—one to ten hours—after being caught. Decomposing fish are especially dangerous to invalids. Salted fish are objectionable on account of the salt. Butter, cheese, and eggs are very hearty food, and may be used in moderation. Eggs should be taken raw—beaten with a little milk—or slightly cooked. Cooking hardens the albumen, of which the egg largely consists, and renders it more indigestible. No egg is fit for eating that

will swim or float in fresh water. If perfectly fresh it lies flat at the bottom in a vessel of fresh water.

Coffee Inebriety.

Coffee is a stimulant to the brain; and as action and reaction are equal, its first effect is *followed* by nervous depression that is apt to degenerate into headaches, insomnia, trembling and paralysis. All unnatural stimulants militate against health and long life.

Variety of Food.

A disease, similar to what is called in India Beriberi, is known as Kak'ke in Japan. It is a condition of *great weakness,* as the term, Beriberi, implies, and is probably due to an almost exclusive and protracted diet of rice, or starchy food, which contains no nitrogen and is not sufficient to nourish the different tissues of the body. A fair proportion of food *rich in nitrogen* is necessary to nourish the nerves and muscles. The gluten of wheat, the legumen of peas and beans, the casein of cheese, the fibrin of animal food, cabbage, and cauliflower are all nitrogenous foods.

Beans are no doubt hearty and substantial for laboring men, but they are not an ideal food. Experiments have shown that they tend to produce fermentation, flatulence, vertigo, constipation and other symptoms of disease, especially in invalids and persons of sedentary habits.

The potato comes to us from South America. It belongs to a family of poisonous plants—the Nightshades. They all contain solanine—a poisonous alkaloid, and some of the Nightshades are highly poisonous. The solanine of the po-

tato is found mainly in the *skin,* or peeling of the potato, in the *vines* and *rootlets,* in *unripe* potatoes, and in the *buds,* or *eyes* of *old potatoes.* The solanine is driven off by the dry heat of the oven, as in baking, and this is the reason why baked potatoes are more wholesome. To be wholesome, potatoes must be ripe and mealy, and old potatoes, when sprouting, should be pared *before being boiled,* so as to be freed much as possible from the solanine, which they always contain. Unless these precautions are taken, the potato is not altogether wholesome as an article of diet. It is often ejected by weak stomachs. By planting the seeds found in the potato ball on the ripe vines, we get *new varieties* of potatoes. The constant planting of potatoes in the usual way is really only setting out old potatoes. The potato is a tuber. When ripe and mealy, they are a valuable food.

Rice cooked three hours in a farina boiler and eaten with scalded milk is safe food for weak stomachs during an attack of bowel complaint. This diet continued for two or three days will often cure inveterate cases.

The best time for eating is when we can get an honest appetite. One or two meals a day is often better than more. Dyspeptics often recover health, strength and flesh with only one meal per day. Take no more than is necessary to ward off hunger, and be comfortable.

Vegetarian Points.

The Kafir and Tartar live on milk; the Arabs on dates.

The Smyrna porter, on vegetable food, walks off with a load of 800 pounds on his shoulders.

A diet of fruit and grains costs only half as much as animal food.

Brown bread and milk, oatmeal or rye mush, with some sugar, cheese and fruit form a charming and wholesome diet.

Measles, scrofula, trichinæ and tapeworm are traced, it is said, to the use of pork and bacon.

THE MYSTIC TEMPLE OF BEING.

An Introduction to Ontology.

We stand at the door of mystery. It is open. Let us enter with uncovered heads. Over the portal is inscribed, "Put off thy shoes from off thy feet; for the place whereon thou standest is holy" (*i. e.*, whole or perfect) "ground." Ex. 3, 5. This implies that we must allow nothing to come between us and the ground on which we stand, viz: our own *understanding*, as the basic faculty of the mind, which is holy or perfect ground. We are now in the temple of Being. It is vast and all-inclusive, for all things have being; but how things came to be and what the primal cause of being, is to us a mystery. By tracing cause and effect, however, we may approximate to the source of being, but as we approach the wonder or mystery of being is still ever unsolved. We know not the whence or the whither. We occupy only the present, whatever that may be. The past and future are both to us indefinite. And what is the present? It is only that which intervenes between the past and future. In the stream of time it is a *line* without breadth or thickness; and yet we cannot act in the past or future. We can act only in the present. What the present really *is to us* depends upon the growth of our consciousness, the expansion of the mind. It includes all that which fills the mind at once, whether it be a moment, an hour, a day, year, century or eternity. We speak properly of the present year or the present century; and as our thought and consciousness expands, we include more and more of the past and future in the present; and when at last we include all in the present, the present becomes eternity; and so to the infinite or unlimited mind all things are constantly present, and the past

and future become blended and lost in the *now*. Really, then we are living in eternity now. Being is eternal. Were it not so, there could be no cause of being and no effect. From nothing, nothing comes. This is a self-evident truth. There must then be something eternal from which all things have come; something that has always been; something self-existent. Of this truth (self-existence) we can have no very definite conception. The Infinite is and must be inaccessible to finite thought. Self-existence is itself a mystery. Our physical senses are finite; but science and logic take hold of the Infinite. There is absolutely no limit to the multiplication or division of numbers. Carry on the operation long as we may, we pause at last as we began in the presence of the Infinite—the mystery of mysteries. Time, however, belongs to the finite only, and serves in human speech to mark the limits of events. Time, whether longer or shorter, is always limited, so is space; but essential being transcends the limits or bounds of any time or space imaginable and lives through all. The finite cannot comprehend the Infinite, for the whole is greater than any of its parts; but through our consciousness, which is an attribute of the mind, our thought expands until we gain ideas of the infinite and absolute. The absolute is that which depends on nothing else for its being. It *is* in and of itself.

The absolute is sovereign over all, and the logic of being or truth demonstrated which is absolute, is our pathway to the perfect, the absolute and eternal.

Ontology is the science that contains the keys to the kingdom of heaven, and to that we now invite the reader's attention.

ONTOLOGY.

(Logic of Being.)

The term Logic is derived from the Greek language, and is used to signify pure reason, or understanding. The "*Logos*" was the "Word," "and the Word was God." (See St. John 1,1.) It "was in the beginning with God." "*Logos*" is properly translated into English by our words science, reason, treatise or discourse; but it is impossible to convey in human speech its full meaning as used by the evangelist. It was something in which the *Life* resided, "and the Life was the light of men." It is evidently, the understanding of things; the SUBSTANCE (not matter, but that which upholds and sustains all matter), the Divine Mind. The word "*Logos*" forms the basis of nearly all our scientific terms and is, therefore, the very essence of Science; and we may define Science (*i. e.*, True Science) as the divine method of proceeding, or the Perfect Way. "I am the Way" (said the man who represented and spoke in the name of Truth), "the Truth, and the Life."

That Being includes everything that is, is evident from the fact that "is" and "being" are both forms of the same verb, "to be." But what there is in the universe is a question not yet settled. One maintains that all is Mind; that there is naught but God and his ideas; and another is equally sure that there is naught but matter and force.

Now, in the Logic of Being it is not prima facie evidence that nothing is because we see nothing. We may be blind. Our senses are limited. Being is unlimited, as the very form of the word implies. The termination "ing" implies a continuance of action. Being may include more than we see or

perceive by the senses. But, taking up the question in dispute between mind and matter, we must admit that mind is in many respects very different from what we term matter. It is invisible and intangible. It is more; it is *imperceptible by any outward sense.* To say that mind, or ideas, can be felt with the fingers, seen with the outward organs of vision, tasted in the mouth, or perceived through the olfactory or auditory nerve, is contrary to the use of language; and yet the materialist will not deny that the mind *is.* He claims, however, that mind is material, in some form, for as a materialist he cannot conceive of an immaterial substance. To him whatever is, is matter. Even mind is the outgrowth or product of refined matter, if we accept his statement. Having learned to use and trust his senses, the materialist cannot readily pass beyond the realm of the senses; and so the materialist invests matter with all the attributes of mind. Nature (the visible creation) is to him a blind force, as well as an appearance, exact in its methods, wonderful in its operations and relentless as fate. Mind and matter to him are all one, and that is what he calls matter. To the pure Idealist mind and matter are also one; but that one to him is mind. So far, then, as fact of being is concerned, it is only a change of terms. One sees in matter what the other sees in mind. A third class positively denies the existence of matter, and holds a belief in its existence to be "mortal error." Now, it is not likely that this third class will deny the existence of *something* that mortals call matter, but to them it is not matter, but an expression of mind, the *idea of God.* Now, in the ordinary use of language an *idea* is not visible to the *outward* sight, while that which mortals call matter *is* visible. An idea, according to general acceptation, is the *image* or *representation* of outward objects *in the mind.* According to Descartes (Dacart), Locke and many other philoso-

phers, *idea* is used to signify a sensation, perception, conception, notion, image or thought in the mind, while *outward objects* are things that answer or correspond to these ideas, and constitute what we call nature. But the definition of Plato makes the subject still plainer. According to him an *idea* is an eternal, immutable, immaterial form or *model* of an object; an archetype or pattern, according to which the Deity fashioned the phenomenal world.

According to Plato, an idea is immutable, or unchangeable, and no one will hardly claim that an *idea of God is mutable,* or that matter is *im*mutable, and if not, then matter cannot be an idea of God, nor can any *material* form, like a tree, a flower, or the body of man, be an idea of God. It can only be expressive of an idea. The model and the thing made are two distinct things. One is an immutable thought, the other is a mutable *expression* of that thought. "See that thou makest all things after the pattern shown thee in the mount" (which is the *ideal* realm). The idea of a house is conceived in the mind before the house itself is built. The house may be destroyed; but the *idea* of the house cannot be destroyed. To *say* that no house ever exists, and no matter with which to build a house exists, but that the idea of a house is all there really is, is to pervert the use of language and talk absurdly.

And even on the baseless assumption that matter has no existence, what shall we gain by substituting the phrase "idea of God," or "expression of the idea of God," for the term matter? Would the change facilitate the use of language or tend to exalt the character of God in the minds of his creatures? On the contrary, would it not tend to degrade the character of God to a level with man's conception of matter, and render it difficult for us to communicate our

ideas of the external world? Matter actually *exists* (is "placed out from" the mind). And again, we are conscious that the *eternal* world is something distinct from the human mind. Even our bodies, which are most intimately related to the mind, we study as something outside of our minds. Socrates, in speaking of his body, said: "Do what you please with it; I shall not be there." The Ego, the mind or essential man and his physical body were to Socrates not one, but two distinct things, and what better terms can we use to designate them than mind and matter? Mind and matter are terms well established in human speech for use by human beings in human life—our present mode of being. Can we do better than retain them? We can only use the language of the gods as we become gods. Human language is imperfect, and we may of right improve it if we can. *"God"* is a term used in our language to express our *ideal* of the Supreme Good. The word was undoubtedly formed by the contraction of the word Good, thus Go'd, and finally God. It expresses much more to one mind than to another; and becomes universal only to the philosopher who sees evidence of Good in everything, and to whom all human distinctions of high and low fade away. In Astronomy we find no "up" or "down," except with reference to some *special* planet, like the earth; and even then, up and down signify *every* direction *to* and *from* the center of the earth. So Good and Evil in human life—for these terms are calculated as an eclipse for our latitude, or present *mode of being*—signify the direction *to* or *from* the central Heart of the Infinite as manifested to each human soul. And since these manifestations differ, "as one star differeth from another star in glory," so what is good to one is sometimes evil to another, and will so continue till such a time as all are made perfect

in One, and then shall evil wholly disappear, and God be all in all.

To the ordinary mind God is not universal, not omnipresent. His presence is not always recognized. Of the wicked the Psalmist says: "God is not in all their thoughts." To the Infidel God is sometimes "nowhere;" but the little child finds Him and syllables the same word, "NOW-HERE." *Honi soit qui mal y pense* (evil to him who evil thinks) is a familiar saying. Evil exists only as a *lower state of development,* and the lower in human speech is tributary to the higher. All fruit is necessarily green before it is ripe; and to him who looks for fruit before its season, evil comes in the form of disappointment. The Logic of Being points to unerring Wisdom. "Come up higher" is the lesson of evil. "To *depart* from evil is understanding." Evil is the *absence of good.* It is a negative term and will do no harm if left alone. It is also a relative term, and relates to *human* thought and not to the Absolute or Perfect Mind. The term Devil is the impersonation of what is called Evil, as God is the impersonation of Good; and the two terms, *together,* make *up* the infinite manifestations of spirit. Spirit is universal, the source of all power, life and action; and is called in human speech good or bad, God or the Devil, according to man's idea, or belief, of its moral quality. The higher manifestations of spirit are recognized by man as God's work; but the lower as the Devil's. The term Devil was probably formed by prefixing the letter "D" to the word *evil,* thus (D)evil. Of course, the time was, and not very long ago, when all these English words had to be coined, and by going back to their origin we gain a clearer idea of their meaning. The Devil, in popular speech, is the "Father of Lies," and "he reigns in hell." *Hell* signifies to "cover up," or conceal, and is typical of darkness,

which tends to conceal from view. Matter often tends to conceal spirit; for spirit itself is invisible to outward sight. The farmer covers up, or conceals the seed in the ground (matter) that it may germinate. The lower condition must precede the higher. Such is the Logic of Being. To him who did not understand, the seed covered up in the ground might be mourned as lost, and its bursting and decay pronounced evil. The seed, indeed, dies, but its death is the liberation of power to multiply and bear fruit. All is the work of Spirit; but the manifestation of spirit, *to the senses,* is what is usually termed matter. We have spoken of Being as including all things that make up the universe; or, in other words, all things that *are.* To the Idealist all things subsist in Mind; and nature is an expression of Mind. To the materialist all things are material, mind an expression or phenomenon of matter, and Nature becomes a synonym for God, or a mixture of Good and Ill, according to his understanding. Now, who shall say that one is right, the other wrong? There is, be it remembered, a relative and an absolute right. The relative right is to follow one's own convictions and harken to his own understanding; the absolute right is that which tends most to elevate and improve the human race and all God's creatures. The absolute right belongs not to the human, but to the Divine; and to be absolutely right is to be divine. The perfect way is true science, and the Logic of Being, in conjunction with conscience, is our guide. Truth is always consistent with itself and brings all things into harmony; while error is discordant. Mind is a generic term, including soul and more or less perfect manifestation of spirit; but some authors use the three terms, mind, soul and spirit, interchangeably; and, indeed, it is more difficult to distinguish these from each other than it is to distinguish mind and matter; and yet mind and mat-

ter are not separated as to space, but are always found associated. Logically mind and matter differ widely as the poles, and really form the poles of Being. Matter is visible, or perceptible to physical sense; mind is not. Matter is divisible, mind is *in*divisible. Matter has the properties of extension, form, inertia and gravity; mind has none of these. Matter and mind are the two extremes of consciousness; one is intelligent, the other non-intelligent. Both, however, are included in Being, and are correlatives.

"The Lord of all, himself through all diffused,
Sustains and is the life of all that lives."

—*Cowper.*

"All are but parts of one stupendous whole,
Whose body nature is, and God the Soul."

—*Pope.*

"God is Spirit." St. John, 4, 24. See also I Cor., 12, 4 to 13; and Pslams, 139, 7 to 10.

Spirit is "immaterial substance." *Worcester's Dictionary.*

"The term *spirit* properly denotes a being without a (material) body."—Fleming.

A unit, or unity, is an entire, whole, complete thing. God is Unity.

Principle is a fundamental truth; the original cause. God is Principle.

Power is ability to do; force capable of originating force. God is Power.

Truth is reality as opposed to falsehood. God is Truth.

Life is that which makes alive. God is Life.

Love is that which renders its object dear and precious. God is Love.

Light is that which renders objects perceptible. God is Light.

Mind is the thinking principle. God is the Infinite and Eternal Mind.

Physicists hold that God is the Great Unknown, and some say Unknowable. They hold, also, that nature *may be known,* and what is called science is built upon the supposed fact that matter and nature are real and substantial; whereas, the fact is, that all things in nature are very *unsub*stantial and very changeable, and that the unseen or invisible things are alone substantial and eternal. All material things change, but God never changes. The position of those who teach the physical sciences is therefore exactly wrong. We *can* know God, because he is *always the same;* but we can never know nature, because it is phenomenal and continually changing.

But *how* can we know God, who is spirit? The spirit we cannot see; we can only see the phenomena (appearances) which we call nature; *i. e.,* material forms. To know God, we must then study the invisible. This we cannot do with the ordinary senses. The senses deal only with matter. But we can study the invisible with the mind and soul. "Spiritual things are spiritually discerned." "God is love." And love we may know by experience, by the soul-life. God is Truth, Intelligence, Power. These we may know through the mind. And so all the attributes of God may be known by the human mind. And to know the attributes of God is to know God Himself.

We have two sources of knowledge, or, more properly *two avenues,* by which we gain knowledge: the *external world,* which we call nature, and the *mind itself.* Knowledge, through the mind itself, may be called the intuitive

method. It is the *royal road* to learning. Physicists call intuition "unconscious cerebration." It is a glimpse of celestial light.

Spirit is the positive pole of Being and does directly and indirectly all things. It is the energizing Principle (Original Cause). Matter is a term representing the negative pole of Being, and is *apparently,* but not really, so far removed from Spirit (giving, ordinarily, no sensuous evidence of life) that it is said to be dead, or inert.

Matter is the instrument, or organ; Spirit the musician, or actor. We might call matter *fossilized spirit,* but in the lower forms of nature matter does not, as the fossil does, retain enough of its Archetype to remind us of Spirit. Matter is a name for the ashes from which the Fire of Being has apparently gone out; not in the absolute sense, but in human language, and *to human sense.* Matter turns a deaf ear to the piteous cries of an agonized soul, but obeys instantly the demands of intelligent mind. The Understanding and the Will can always mould matter to their liking. It is always plastic in their hands. The higher always controls the lower. Such is the law or edict of the great I AM, the divine Presence. Matter, by many, is considered the only real thing in the universe; and there are others who affirm that matter is wholly, *utterly, un*real. Such conflicting opinions often arise merely from the ambiguity of words. The language of human beings is by no means perfect. The word *real* is derived from a Latin word that signifies a *thing.* Thing is a very indefinite and comprehensive term. Whatever we can think about is a thing. *Real* signifies belonging to the thing *as it is,* without any deception. It is defined by Worcester by the words, "true, genuine, actual, actual being or existing, absolute." Things are unreal that are fictitious,

false, unsubstantial (not resting in Truth). Now, according to these definitions, matter is always real whenever we have a true conception of it; or in other words, when it appears to us *as it* really *is*. If we have a *false* conception of matter, and it is not to us what we think it to be, then, to us, it is *un*real; so that the assertion that "matter is unreal" is equivalent to saying that no one ever understands what matter is. That matter, as such, is *act*ual, in the sense that it *acts* as a primal cause, or that it is *substantial* as an underlying Principle or sustaining Power, is not our idea, or the idea of the lexicographer; but as an *expression, or phenomenon of Spirit,* matter is as real as Spirit itself.

Matter, in the great aggregate, makes up what we call Nature. And here, again, is another ambiguous word. To the critical and philosophic mind Nature represents the outward, visible world, in distinction from the inner, invisible world which is the world of force and ideas—the world of mind. To another, less analytic in his thought, the term Nature embraces both mind and matter, for to him the two worlds are essentially one. Again, the term Nature is often used in common language to signify the Author or Producer of all things. In this sense Nature is used as a synonym for Spirit or Infinite Mind. Literally, as we learn from the derivation of the word, Nature is something "born," or borne; and since nothing can be born without parents, or sustained without a sustainer, we are irresistibly led by the meaning of the word to the parent source of Nature, the ideal realm, the realm of Infinite Mind, the great Patent Office of Being where all the infinite models (or ideas) of Nature are kept. All material forms presented to the senses of man first had being in the realm of ideas. Ideas are always the original models of things, whether natural or artificial; and all mate-

rial forms are only the imperfect representation of those models.

"Great are the symbols of Being, but that which is symboled is greater; vast the create and beheld, but vaster the inward "Creator." Nature with her myriads of beautiful forms is but the aggregate of phenomena (appearances) presented to our senses, and may be called the vesture or garment of Spirit. It is that which Deity wraps about him as a screen or veil presented to mortal sight and sense. It is the totality of matter. Matter has its grades of fineness, and through them Spirit reveals various degrees of its manifestation; but spirit can be *known* to spirit only. Spirit is omnipresent and is made manifest in proportion to the fineness and activity of matter and the perfection of the form through which it manifests. In minerals matter is gross and gives little evidence of spirit, but the property of polarity and laws of crystallization observed in the mineral kingdom are at least a hint of the presence of Spirit. To the true philosopher, "Every common bush is ablaze with God; every mountain is as holy as Sinai; *every* river as sacred as the Jordan."

"God is imminent in nature and in the laws of the human mind."

"The physical organism is the soul made visible."

"The mountain itself is a mirage, the sea but a vapor, and the wind a figure of speech for this ghostly force" (Spirit).

In nature "Being passes into *appearance* and unity into variety."

The natural is the symbol only of the spiritual.

"Though what if earth
Be but the shadow of heaven, and things therein,
Each to other like, more than on earth is thought."

—*Milton.*

There is nothing on the natural plane that is not in the spiritual; for the natural is only the outward expression of what was first conceived in Mind.

There is no shadow without its substance. Matter is represented by the shadow, and spirit, which sustains matter, is the substance. "For the invisible things * * * are clearly seen, being understood by the things that are made." Rom., 1-20.

Nothing is absolutely, but only relatively, dead. All is instinct with spirit, and spirit is the essential element of Mind. "The whole universe subsists, is maintained, "and can only subsist within such a sentient, invisible and conscious thing as the Mind is known to be."—Bishop Berkeley. God is spirit; Nature is matter; and *logically* (as subjects of thought) spirit and matter are separated by an impassable gulf; and no bridge "projected from *Nature's* abutments can span" the abyss that separates, *logically,* Mind and Matter. To confound the two in our thought is to often lose sight of the higher attributes of the Immortal Mind. "Nature in all her wondrous mechanism is but mechanism still." She moves "mutely and automatically" in her never-ceasing "rounds, and can never tell whence she is or whither she is going." Mind alone can penetrate the veil of mystery that closely wraps her (Nature) round. Not in nature can man find his *essential* self for he is not there; the essence of his being is spirit. The body is only the habiliment of the mind. All existences are actuated by Spirit — the Infinite Mind.

"The original of all things is one thing. Creation is one whole. The differences a mortal sees are diverse only to the finite mind."—Festus. Matter is like the screen on which the pictures of the magic lantern appear. The pictures themselves are in the mind and are illuminated by the Spirit. Matter constitutes the body or visible part of man. The mind or soul, is the invisible, *essential* man.

And "Thou celestial light shine inward and the mind through all her powers irradiate; there plant eyes, all mist from thence purge and disperse, that I may see and tell of things invisible to mortal sight."—Milton.

Objects of nature are not *perfect* things any more than they are eternal; they are approximations only to the perfect. The perfect is the ideal. All nature, as all artificial things, is a perpetual effort to embody the beautiful ideal. There is not in all the universe of matter a perfect sphere or a perfect circle. There is no perfect natural man, but there is within us a perfect *ideal* man, and that ideal man is the image of God. To set free our ideal, as a statue from the quarry, is the task set before us. Unshackle the mind. Life is a term which implies the opposite of death. Life and death, like spirit and matter, are the poles of being, antithetic terms. Where one *is* the other is not. They are terms that signify, to finite minds, the *supposed absence* or *presence* of Spirit, which is the Essence, or Fountain of Life. But to the philosophic mind spirit is universal, omnipresent, and there is no time or place where spirit is not; and consequently, if death signifies the absence of spirit, there is no death, as spirit is everywhere present. But, veiled in matter, spirit is not always recognized by finite minds; and where, or whenever the spirit is *not* recognized, but is *supposed to be absent*, death presides. In the mineral kingdom the so-

called scientist (more properly, physicist) sees no evidence of life; never speaking of mineral life, but only of vegetable and animal life; and yet it is generally admitted that God is Spirit and is omnipresent (everywhere present). And so *humanly* speaking, spirit must be present, even in the mineral. Not that the mineral and the spirit are the same, for one is matter, visible and divisible, which spirit is not; but as to space even the mineral is always associated with spirit. It is *in* Spirit that all things are. Spirit is absent *only* to the outward sense. Space is that which separates and limits objects of sense. It is not applicable to spirit. Neither is *time* applicable to spirit, for spirit is universal Presence. So the term death is not applicable in any sense to spirit, for spirit is Life. Death touches not life. Death is a human expression and applies only to the finite. *Human life,* as generally understood, is finite, and as such is subject to death. It begins and ends. "Man is born to die." But the Spirit is neither born, nor is it subject to death. The *finite* only can begin and end. Infinity has no beginning or ending. If man is finite he dies; if infinite, he lives forever. Such is the Logic of Being.

To outward sense matter seems substantial, solid, real; but it is so only when we understand it *as it is.* To the naturalist, or materialist, matter and substance are usually considered as one and the same; but in the original, substance (standing under) was the underlying principle, the essence of being. Spirit is the sustaining Power, the Essence of Being, the underlying Principle, and therefore substance; while matter is the thing upheld or sustained by Spirit. Take away spirit and matter would not be. We must not ascribe to matter what belongs only to spirit. Matter is real as an appearance, phenomenon, or expression of spirit; but it is

not real when we conceive of it as something in and of itself, independent of spirit. It is a convenient term for use in human speech as one of the poles of Being; the *hiding place* of Power, or Force; the outward representation of the ideal; the plastic, non-intelligent servant of the intelligent Mind. It is always at the birth of all created things, but it never creates; it forms, or composes, the so-called sentient nerves, but it never feels; it is the vehicle of all finite life, but never lives; it is the negative side only of Life and Being.

The Greeks had two different words to designate life, *Bios* and *Zoe*; and from these came our two words, Biology and Zoology. One of these terms applies to finite *human* life, the other to the infinite Principle of Life as manifested in the nature of all animals; one was the way or course of life, the other the means of living, or essence of life. Human life is only one of the phases of endless Being, like one of the facets of the diamond, or crystal, while the entire diamond represents the universal and infinite Life. The one is nothing without the other. Spirit is Essential Being, and is the life of all that lives; and man truly lives only as he recognizes his union, or oneness, with the Spirit, which is the Life of all. And when man comes to recognize his own oneness with the Infinite, the Perfect, he will find himself superior to matter and will fashion the body and all material "things" after the pattern shown" in the mount (the ideal world).

To talk of the origin of life is absurd. LIFE IS, always and forever. 'Tis only the manifestation of life that changes. We may pass from one phase of life to another, but Life itself is the I AM—the universal Being. It is holy and sacred.

"Where did you come from, baby dear?
Out of the everywhere into here."

—Geo. McDonald.

Spirit is Life in the highest sense, and Cowper says:

"The Lord of all, himself through all diffused,
Sustains and is the life of all that lives."

All things have their being in God, and without Him there is no substance or life. He is the Being of all that are; the life of all that live.

"Whither shall I go from thy spirit? Or whither shall I flee from thy presence. If I ascend up into heaven, thou art there. If I take the wings of the morning and dwell in the uttermost parts of the sea, even there shall thy hand lead me, and thy right hand shall hold me." Psalms, 139, 7-10.

Owing to the imperfection of human language, the terms soul and spirit are often confounded. Some consider the Soul the innermost and highest; others, the Spirit. According to the Bible God is Spirit, and the term God is certainly used to designate the highest Being—the Supreme Good. As *compared with the body,* the soul is the immaterial, vital part of an animated being. In the Greek language the soul and the butterfly are expressed by the same word, "Psyche;" and this fact sheds some light upon the nature of the soul. The butterfly is the perfected form of the caterpillar, and comes forth from the chrysalis, which bears a similar relation to the caterpillar that the dead body does to the living person; or, we may say that the soul at the resurrection comes forth from the dead body as the butterfly from the chrysalis. And the relation can be traced still further, from the fact that the term larva, which is used to designate the caterpillar state, signifies a mask, spectre, or appearance, which is also the meaning of the term "person." And yet, again, the larva represents the first stage of existence after leaving the egg (or ovum); which is the present state of man. At death the person (mask, spectre or larva)

becomes the chrysalis, and from that (the dead body) comes forth the soul (the butterfly). If, then, we trace the Divine method, it is this: First the egg, or ovum, which is the embryotic state of man; second the caterpillar, or larva, which corresponds to what we call a person (the mask); third, the chrysalis, which represents the dead body of the person; and fourth, the butterfly, which represents the soul. The caterpillar creeps upon the ground, as persons grovel upon the earth; but the butterfly, like the soul, is not confined to earth; it soars at pleasure above the earth.

The soul is organized life, or embodied spirit. It is the moving power that governs and controls the human body. "There is a natural body and there is a spiritual body." The body is the scaffolding, and the soul does not appear in its glory until the scaffolding becomes spiritualized, or is entirely removed, as it will be at the resurrection—the apothesis of the soul.

The soul corresponds to the transparency, or slide, in the magic lantern, through which the rays of light are transmitted to the canvass, or screen, on which the picture is formed; while the Spirit corresponds to the light of the lantern that illuminates the whole; and the material part, or body, of an animated being corresponds to the picture thrown upon the canvas.

The term mind, as applied to finite beings, is not greater than spirit, but less, for the soul is limited and limits the manifestation of spirit.

The soul is the inferior part of our intellectual and spiritual nature; the seat of the emotions, passions and appetites; the force, or link of force, which connects the spirit with the body. The terms mind, soul and spirit are all used by authors and speakers somewhat indefinitely on account of

our meager attainments in Psychology (study of soul-life) and Metaphysics (study of mind). The body is the first to be recognized in human life; consequently the body, as recognized by the senses, assumes, at first, an importance which does not belong to it. Later in life the *soul* is recognized by the consciousness as the essential man, and, for the time being, becomes the immaterial and immortal part; still, like the body, assuming to be the innermost and highest. Last of all, in the development of the human, *spirit-life* bursts upon the consciousness, and is sooner or later seen to be the *all in all*. Without spirit both soul and body would cease to be. So it is in the growth of the human mind that the terms soul and spirit have a varying significance, and, like dissolving views the one melts into the other. Words often convey to different minds different significations. So with soul and spirit. Until man becomes *conscious of spirit*, the soul is the innermost and highest, but *after* that the soul is seen to be limited, or finite, while the spirit is infinite.

The term mind embraces all there is of man except the body, or material part; consequently the soul *is* the mind until we become conscious of spirit; *then* the term mind embraces both soul *and* some manifestations of spirit. The soul, like the outward body, is finite and gives individuality to man. The soul, like the slide, or transparency, in the magic lantern, may be imperfect, but the spirit is perfect and knows no change. The soul is changeable, and by reason of its intimate connection with the mind, makes that also changeable, until such time in the great cycle of Being when the soul becomes perfected. The soul is the battle ground between the finite and the Infinite; the Perfect and the imperfect. The Infinite is identical with the perfect. The body is the garment which the soul weaves for itself in subjection to the

demands of the spirit. There are metes and bounds in nature, and so of the soul till it becomes one with the Infinite, then it is free. Everywhere the higher controls the lower, and the soul, in connection with the spirit, is superior to matter. Soul and Spirit! These together constitute what we call the mind. What is the mind? How few can tell! And, yet, strange as it may seem, all our schools and institutions of learning have been established for the distinct purpose of educating (leading forth) or developing the mind.

"Some few, whose lamp shone brighter, have been led,
From cause to cause, to nature's secret head,
And found that one first *principle* must be."

—*Dryden.*

The mind is the thinking principle; that which remembers, reasons, perceives and understands. Beyond it nothing is. It is the kingdom of heaven; and when divinely illumined and purged from sin and error, becomes the kingdom of God. "The kingdom of God is within you." Luke, 17, 21.

Heaven (heaved up) is an elevated place. On the material plane of being, heaven is the region of the clouds, or sky; the region of the sun and moon and stellar orbs. This is heaven in the lowest sense, or heaven *on the natural plane.* But over and above all nature and material things reigns the Mind; hence, in a larger and truer sense, the Mind is the kingdom of heaven. It is a region elevated above the plane of material things where the Spirit reigns as King, and the souls of all are His subjects. The keys of the kingdom of heaven (Matt., 16, 19) are the principles that will serve to unlock, or unfold the Mind. The Mind embraces the invisible, the ideal, the permanent, but does not embrace what we call matter, of which the body is composed. In the largest sense, Mind embraces the Infinite Spirit which we call God,

and is universal; but in a smaller sense, as applied to the *human* being, it is finite, and embraces the limited soul of man, acting in harmony with or in opposition to, the holy or perfect spirit, which, by its truth, rules in the kingdom of heaven.

The human mind, like the net "cast into the sea, which gathered of every kind," contains more or less error, and by reason of error is mortal; for error must die when the truth comes in; but spirit never dies. The soul dwells on the border-land of matter and spirit, and partakes of the nature of both. It is the lower stratum of the Mind, and includes the affections and emotions, appetites and passions, and until perfected is changeable and mortal; but the spirit is perfect and immortal. Thus the Mind is a vast treasure-house, illimitable and unfathomable; not "merely a mirror, reflecting and retaining the impressions of external things," for then it could have no originality; but the Mind is a mental universe, "full of images of real things not yet existing on this earth,—things strange," and beautiful, unthought of and undreamed of by man; all possibilities and all powers: these remain in the kingdom of heaven, which is the Mind—and the mind purged of error is the kingdom of God.

Our bodies are the temple of God, and, as such, sacred and holy, made for our use, and not for abuse.

Ontology is the scientific or technical term for "Logic of Being," or universal science. Science is not man's opinion; it is the method by which truth may be demonstrated. What is truth no human being can answer for another. Another may furnish aid, instruments, principles and methods, but each individual must go over the road for himself in order to know the Truth. Truth is the divine word; it is that which God speaks always and everywhere. "Thy word is truth." (John, 17, 17.)

All science, worthy of the name, is truth, for science is the expounding of God's will; is the method by which the Infinite Mind performs his wonders in the universe of mind and matter. But we must not accept as science the fallible opinions of men, but must substitute knowledge for belief. If we examine the word "be-lie-f," we shall find a lie at its heart. Away with it, and let us have understanding. No one can be saved till he understands for himself. Understanding is the birthright of every man, woman and child, and "to depart from evil is understanding." What God is we *may* know, the opinion of great philosophers to the contrary notwithstanding. We are his offspring and made in His image. An image is a likeness, and by knowing the image we come to know the original. Man has been called an epitome (abridgement) of the universe; and the universe is the embodiment, or outward manifestation, of universal Spirit.

In the study of Ontology science and religion are found to blend on the common ground of the understanding and constitute a medicine at once for soul and body. Religion signifies, literally, "reunion." It reunites the soul consciously to its Author, from which it is by nature (i. e., by material things) separated.

True science is the divine method of proceeding, and to discover this method as it runs through the universe, and recognize it *as* the divine method, is to find religion. True science, like true religion, leads inevitably to a perfect consecration of the soul to truth; and the spirit of Truth is the very Christ that judges and saves us. Truth in its totality makes up what we may with great propriety call the holy Bible. Bible signifies "book," and holy, "whole," hence holy Bible, "whole book," or the book that contains all truth; and only in a limited sense can any book be called holy. In the

absolute sense, only the universe can with propriety be called the "Holy Bible." And when we say the universe we mean not only the visible realm of matter which we call nature, but we mean also to include the invisible realm of mind that contains all souls that ever were, are, and are to be, and unites them in glorious companionship with the one Infinite and eternal Being who is all in all. Such is the Holy Bible which man shall read when he enters with faith and understanding the realm of mind which is the kingdom of heaven. Let us then with uncovered heads and with shoes removed from our feet enter the study of Being, where the Spirit reigns alone. To the true philosopher the terms Spirit, God, Mind and Infinite Being, are all only different names for the same Cause and Power, but to ordinary minds they differ materially. Spirit is universal, but to the ordinary mind, God is not universal. He shares the universe (is supposed to) with another being that antagonizes Him, and, in ordinary human speech is called the Devil. God is only another name for the Supreme Good, and to the ordinary mind, only the *higher* manifestations of spirit are manifestations of God. The *lower* manifestations go in common Christian parlance by another name. So-called science assumes *two* forces instead of one. It talks of a positive and *negative* force. But a negative force is no force at all. It is only the absence of force; an expression in erring human speech of a stronger force in the opposite direction. A cork rises through the water, or a balloon through the air, not because a negative force is pushing them away from the center of the earth, but because the air and water are drawn the more strongly. Thus the one manifestation of force called gravitation compels one object to descend and another to ascend. One goes towards the Good, the center of power, and the other towards the

Bad because displaced. Again, the study of conditions called "disease," in so-called medical science, takes the name of "Pathology," while the study of the same vital force under better conditions is called "Physiology." Thus does Science, falsely so-called, confuse and conceal the truth. Health and Disease are only manifestations of the one Force under such conditions as the more or less perfect mind provides. If we would go to England we must cross the water, for England is an island. If we would have better results in the world of matter we must come nearer the truth in the realm of mind. In the logic of Being a departure from the truth brings evil. According to Clio, Truth is an assured gauge that never diminisheth; a shield that can never be pierced; an army never disarmed; a flower that never fadeth; and a haven wherein no man can ever suffer peril.

According to Eschines, Truth is a virtue without which all strength is feeble; all justice bloody; chastity vain, and liberty itself a prisoner.

According to another, Truth is the center wherein all things do rest; the seaman's chart; and a light whereby the whole world is illumined.

Because Truth is eternal, and age, therefore, one of her garments, the human mind somewhat naturally holds tenaciously to *hoary* headed errors, often mistaking them as truths. The whipping post, imprisonment for debt, and human slavery, have been as thoroughly defended in the past as vaccination, and the present system of drugging for the cure of disease. Everywhere eternal vigilance is the price of liberty, and understanding, each for himself, the only ground of safety.

What is called science, with the single exception of mathematics, is only the fallible opinions of men; and is entitled

at best, only to a fair and complete investigation. Truth, once understood, stamps itself indellibly upon the human soul; and Truth not understood is never quite a truth to us. The UNDERSTANDING is the philosopher's stone that transmutes all baser metals to gold. Substance and understanding are different names for the same thing. Failing to understand, we lose the substance of truth. To the Greek philosopher to understand was the *to kalon* (the Beautiful), the thing to be sought; and to the sacred writer, "to depart from evil is understanding."

The understanding is the highest, deepest, and most interior faculty of that incomprehensible something which we call the human mind.

The science of numbers is the science of Truth, because it deals with fixed ideas. The idea of a unit, or of numbers, is, to all minds, the same forever. The science of mathematics is built on axioms — self-evident propositions, viz.: a straight line is the shortest possible distance between two points; the whole is greater than any of its parts, etc. Whatever we know, we know primarily by facts of consciousness, which is the knowing faculty. We are conscious of being, of time and space, of cause and effect, and of many other things. Truths of which we are not conscious we reach by reasoning, or logic. We are not conscious that smallpox may be developed from unhealthy conditions, and it is generally supposed that it never is so developed, but has its source always from contagion. The error of this supposition is made manifest by logic. The *first* person could not possibly have taken small-pox from another person, since no other person at that time had ever suffered from that disease. In this way old errors may be exploded and truth made manifest. Truth is the direct road to health and happiness. All roads lead to Rome, but some are very

indirect, difficult and tedious. We want the direct road and must consult the charts of our being.

The Logic of Being reverses many of the dogmas of pseudo-science. The sky was once supposed to be solid and the earth flat. These opinions rested upon phenomena presented to the senses; they did not rest in the understanding where truth alone can rest. In the Ptolemaic system of Astronomy the sun was made to revolve about the earth, as it still seems to the senses; but Copernicus and Kepler, guided by the understanding, or Logic of Being, completely changed the system of Ptolemy and unfolded the laws which govern the stellar worlds. We see now how much easier the phenomenon of the sun's motion is explained by the revolution of the earth on its axis than to suppose that the sun performs so large a journey every day. So truth is always the direct and more simple way.

The two systems of astronomy known as the Ptolemaic and Copernican differed widely, but not more widely than the present practice of medicine differs from the Divine method of cure, which is only another name for Scientific Practice. The present practice deals almost wholly with the physical aspects of disease which are only phenomenal, and ignores almost wholly the mind, which is the producing cause. It treats disease as an entity, when in reality it is only a state or condition of mind; and gives a material, or non-intelligent remedy where truth and understanding are alone required.

To remove sin, sickness and the common idea of death, is the ultimate aim and object of Ontology. Sin and sickness are related as cause and effect. Remove the cause and the effect will cease. "Sin is the transgression of the law." John, 3, 4. The law here mentioned is the law of the Infinite

Mind, as reported through nature and revelation. Revelation comes through intuition, or faith. This law of the Infinite is entirely above all human authority. It is revealed to man through the understanding and through the soul and spirit, or inspiration, that it to say, directly through the mind. Truth accepted second-hand, *i. e.,* from *human* authority is no longer truth in the highest sense. There is always a doubt, an uncertainty about it when coming from another, from the partial human mind which robs it of its power, and we name such truth belief, because we do not *know* till it reaches the understanding. But when Truth comes directly from God, through the soul, then it comes with power and with healing, soundness, or wholeness. Truth coming directly through the mind and reaching the understanding banishes error and heals us as readily as light banishes darkness. To know the whole truth is to know no sin, no error, no sickness, no evil, no death. God is Truth, Love, Intelligence, Substance, Understanding, Life; and these have no fellowship with error, fear, sin, sickness and death. If we have one we cannot have the opposite.

The great evil that afflicts men, according to the Epicurean philosophy, is *fear,* fear of the Gods and fear of death. In harmony with this philosophy, so far as fear is concerned, is the idea of the Christian Scientist, who says, "Fear is the *foundation of all sickness.* Some image of disease is frightening you; and your mental state *you* call a physical state, and what you hold in mortal mind is on the body" (as a symbol of the mental image) "and you mentally see it and feel it." Another teacher of the mental cure says in a pamphlet: "Fear, either conscious or unconscious, produces all discord."

Now, fear is an emotion (movement of the mind) pro-

duced by the apprehension of danger. It varies greatly in degree and in duration. It is expressed by many terms, as terror, fright, dread, trepidation, alarm, anxiety, solicitude, apprehension, awe, dismay. It rules more or less in all minds. Some are afraid of cold, of heat, of contagion, of accident, of poverty, of sickness, of death. We are often moved unconsciously by fear. We turn pale under the influence of fear. And to say that we turn pale is to say that the blood leaves the surface and distends the heart and lungs. And the distention of these organs produces disease of the heart and lungs. Thus, with absolute certainty, we trace disease to emotions of the mind. We do not now assert that all disease is caused by fear, but we do assert that all disease is caused by some erroneous mental state. To correct the mind is then the only remedy that will not disappoint us. Disease makes its mark on the body. But the change in or upon the body is evidently not the disease, but the sign, or symptom of disease. The symptom is only the flag of distress by which our minds signal to others. A dilated pupil when exposed to strong light is a symptom of amaurosis, which is a loss of power or paralysis of the optic nerve. But the dilated pupil is not the disease. The real disease is the inconvenience of getting along without the use of the optic nerve; or, in other words, without sight. So of all symptoms and all forms of disease. The mark, sign, lesion or injury of the body does not constitute disease, nor is it the ultimate cause of disease, for both disease and its cause are in the mind. The disease is the pain, distress or inconvenience of the mind of the person who needs the perfect use of his body as an instrument, and the mark, sign, lesion or injury of the body is always the result of some thought, emotion, or action of mortal mind; *i. e.*, imperfect mind.

Disease is not an entity; is not substance; has no perma-

nence of being; is not an eternal verity; it is a passing cloud: a shadow of the mind; the absence of health. It springs ever from error, which is the absence of Truth.

Disease not being an entity, but only a state or condition of mind, we cannot poison it with drugs, nor drive it from us. We can only leave it, or remain in it. It is *of* us; and to leave it, we must leave ourselves; *i. e.*, our present condition of mind. We must come up higher, above the clouds.

Health is also a condition of mind. It implies soundness, wholeness. "It is the Divine Life within us coming to a *free* activity and expression." It is in one word, "*holiness.*" "In the philosophy of Jesus religion and health were viewed as one." "The physical organism is the soul made visible," and "what the body is as to strength or weakness, health or disease, will ever depend upon the state of the soul." "It is the soul that gives to the corporeal mass all its life, sense, and motion." The soul is the inferior, emotional part of the mind; the astral body of spirit. Through the soul the mind can hold supreme and exclusive control over every part of the body." "The soul is the architect of the body and forms it" by a process of thinking of which we are generally unconscious; as the soul of the mother forms the body of the infant. Hence in divine Therapeutics, or the true law of cure, understanding and inspiration are of more value than pharmacy.

The words of a physician have a far higher potency than his drugs; and the force of his soul is even more potent than his words. The soul is ethereal and can be felt. It is highly sublimated matter and can be impelled by the will. It serves to individualize spirit as the physical organism serves to individualize mind. The soul and spirit together constitute the natural mind; and to this is added the physical body

to make up man. The body is matter, while the mind is, to mortal sense, *immaterial.* All forms of matter are temporal, existing only in time; mind is in part spiritual, and spiritual things are eternal. "The mountain itself is a mirage, the sea but vapor, and the wind a figure of speech for this ghostly force" of spirit. It is the spirit acting through the soul that moulds, renews and heals the human body. It is always the Divine in nature and in man that heals; and it is self-evident that what is the source of life must be the primal cause and fountain of health. There is but one Life in the universe, and the "thread of our life without a break is ever unwound from His." Jehovah signifies permanent Being, and "Spinoza affirms that God is the only substance." The world and all it contains are the *existence,* or outstanding, of the divine Being; and the latter "is the understanding, the reality, and support of all things."

Physiologists and physicians have long recognized a force in the human organism, but they have not even guessed that it is the same divine Power that made the world and all that is therein. The universal spiritual being that moves the wonderful machinery of the human frame and at the same time stars and suns, could never be found with the scalpel, nor weighed with human scales. To the profession the fleshy manifestation of man is viewed as everything in disease, and the living spiritual principle on which really all depends, as nothing. And yet a mysterious force has been recognized as acting in the human body and has received various names. Hippocrates, the father of medicine, called it the "efforts of nature;" Van Helmont, "vitality;" Stahl, "anima;" Hoffman, "nervous influence;" Darwin, "sensorial energy;" Paracelsus, "archeus" (ruler); Hooper, "vital principle;" Dr. Rush, the "Occult cause;" Culpepper, "vital spirits;" Haller, "stimuli;" Whytt, "sensient principle;" Brown, "caloric;"

Cullen, the "vis medicatrix naturæ;" and Samuel Thompson asserted that "life is heat," which is much the same as Brown's caloric, and approximates to the scriptural idea that "God is a consuming fire;" but none of these came any nearer to the truth than the old philosophers who called this wonderful force, "Primum mobile," — the first cause of motion.

To us God is all and in all and we are His stewards. If action comes from His immortal mind it is harmonious and must ever be; but all action which comes from erring, mortal mind is discordant and produces what we call sin, sickness, and death. To get out of self and live in Him is, then, the problem to be solved.

As there are strata of *earth* and *matter,* so there are *strata* of *mind.* In the realm of mind we have the soul, which borders upon matter, and Spirit, which is immaterial, and, still, essentially substance. In the latter, the Spirit, resides all power, all life, all health. The greater contains and controls the less. The spirit is the greater; is a unit, is one; a whole, perfect, *holy* thing. It is the *"I am,"* or, in other words, Eternal Being, Jehovah. The wind is His breath; the lightning His messenger, and gravitation the expression of His will. In this boundless sea of Life we "live, move and have our being." One Infinite Mind is everywhere manifest in nature, in the material world, by *unity of design,* by the *harmony of motion* observed in planets and distant suns, and in the mental world, or realm of mind, by the great fact that *Truth,* which is only another name for the Infinite Mind, *always harmonizes with itself;* while error, so discordant and personified as evil, springs from as many centers as there are partial human minds; and

the great error of all is in recognizing any life, health, power or happiness outside of Truth and Understanding as it is in the one, Infinite Mind. To find the Truth and let it bear us onward as earth, or sea, bears us on its bosom, is to find eternal life, eternal youth.

Evil is not absolute. It pertains only to the imperfect, erring mind, and not to the Infinite. It is not an entity; has no existence, *per se;* was not created, but is a condition of mortal mind; a predicament into which error plunges us. The lesson of evil to the understanding is, "Depart *from* me; travel in the other direction; face the light; walk in the spirit." With this understanding of evil it is made to praise the Infinite Mind and is no longer evil. 'Tis the kind sentinel who first warns us and then goads us, if need be, back to health and happiness. Evil is the outward, the sensual, the seeming; it is outer darkness, error; but "the kingdom of God is within you" (Luke, 17, 21); and "the kingdom of God is not meat and drink, but righteousness and peace, and joy in the Holy Ghost" (the perfect spirit). (Rom., 14, 17.)

What, then, is man, who has the kingdom of God within him? Man is a generic term for the race, and includes male and female. (See Gen. 1, 26 and 27.) A kingdom includes the king and his subjects. God—the Spirit—is the king, and the souls of man as a whole are the subjects; and these are all within (the collective) man and *together* form the Mind.

Now, the mind is not "merely a mirror reflecting and retaining the impressions of *external* things," for then it could have no originality; but the mind is a mental universe, "full of images of real things not yet existing on this earth—things strange" and beautiful, unthought of and undreamed of; all possibilities, and all powers; these remain in the king-

dom of God, which is within or in the midst of you. (Luke, 17, 21.) The complete man is inspirational, or original. Ideas of beauty, of culture, of dress, art, taste, literature, architecture, mechanics, of morals, and of government, come through the imagination, which is only another name for "the door through which the unknown—dwelling in spiritual light," but veiled from our outward vision, enters our mental horizon and becomes known. Thus man is creative; made in the image of God. Mind is universal, and there is no line of demarcation mentally between the individual man and woman and all others. The limitation belongs only to the seeming. This explains perfectly the known phenomena of mind-reading, of clairvoyance, of mesmerism, of psychometry and even of spiritualism.

The senses are the windows of the soul, the media through which we gain a knowledge of phenomena in the outward realm; and these media—the senses—are more or less imperfect, and with them, therefore, we see as through a glass darkly, but mentally and spiritually, when illumined, we see as we are seen. Then enter into thy closet, lock the senses, as in sleep, and pray to thy Father, which is in secret; and "if we ask anything according to his will, he heareth us." (I John, 5, 14.) Our Father gives us our daily bread when we desire and deserve it. He delivers us from evil when our mind—our better nature—leads us to forsake it; He gives us health when we learn the harmonies and way of life. Empty the mind of self, and let the Infinite Mind, the perfect, reign. Sickness and death come of error, fear and doubt, and these from mental darkness. *Life* itself knows no death, and sickness comes not to the soul that understands.

The body is not you nor I. It has no intelligence to perform a single act, nor can any part, or organ of the body,

think or act. It is the mind, or soul, that moves it and carries on all action; and the mind is connected with all other mind in the universe. Nature, or matter, is a mob of elements and a confusion of waves, which lie at the surface, but the mind, at its source, or foundation, in the understanding, is calm and tranquil like the depths of the sea. The Ego, the I, or me, in its essence, or essential being, is spirit. It is just as easy to think through a block of granite as through an open door, and for the reason that the spirit, which is the life, is everywhere. Motion is evidence of life, and *all* things are ever moving; some very fast; others very slow. In the mineral kingdom there is so little apparent motion that natural philosophers call it dead. The vegetable kingdom gives more evidence of life, and the animal most of all. Rapid motion produces heat and light, and as motion increases matter becomes more luminous and powerful. The sunlight is the most potent agency in nature, and is the best outward symbol of Infinite Intelligence and power. Matter becomes active as it approaches the luminous condition, and powerful as it approaches spirit. In this boundless sea of spirit reside all forces which are found in nature, and it is these that give rise to every variety of phenomenon. The spirit is the creative energy and *forms* all that the eye beholds. All things (inventions) are first discovered in mind, and afterward materialized—*i. e.,* fashioned in matter. We are ourselves creators, and in this sense made in the image of God.

Our bodies are the temple of God and as such sacred and holy. If there is anything vulgar in existence, it is in the mind of man; if there is anything evil, it is in the mind of man, who sees only in part. Disease springs not from use, but from abuse. "Be ye, therefore, perfect." Now, perfection implies a knowledge of science on the part of the actor, agent or doer.

What, then, is Science?

1. Science is *the known;* in a word, knowledge.

2. Any branch of real knowledge is a science.

3. Science is the knowledge of many, concerning some department of Being, so methodically digested and arranged as to become attainable by one or all.

Science, rightly taught, tends to unitize all peoples and nations and renders human efforts more productive.

Science is built up by rational deductions from axioms, or self-evident truths.

In this self-same way in which the exact science of pure mathematics has been established we shall endeavor to show that Ontology is an exact science; and if it is a science at all, it is a universal science, or, in other words, the Science of Sciences.

Ontology is a compound word of Greek origin. The first three letters are found in the root of the imperfect participle of the Greek verb "to be;" hence we have the word "Being" —a word that embraces all things that *are,* whether visible or invisible. The fourth letter of Ontology is the connecting vowel of the two Greek roots that give us the meaning of the word. The next three letters—log—form the root of our word logic, and signify reason, discourse or study. In the first chapter of St. John, in the New Testament, which was first written in Greek, we find the same root in the Greek word, *logos,* which is there made very significant. It is translated into English as "the Word," which was in the beginning with God and by which all things were made. The *logos* is the logic, reason, or *understanding* by which all things are made. Ontology, then, as a whole, signifies the logic, or understanding of Being, or the universal science

of Being. It is based as a science on the axioms, or self-evident truths of Being. Let us mention some of these axioms:

1. From nothing nothing comes.

2. Every effect must have a cause.

3. Things that have a beginning, cannot be eternal, but must have an end, because one end implies another.

All *facts of consciousness* are self-evident truths. That *we live* we know. It is a fact of consciousness, and the most positive proof of anything could not make any fact stronger. That we are surrounded by millions of things very wonderful in nature is a fact of consciousness—a self-evident truth.

All axioms of mathematics are available in Ontology, which includes mathematics. Some of these are the following:

The whole is greater than any of its parts.

The whole is equal to the sum of all its parts. These are self-evident truths.

That there is such a thing as Ontology (Logic of Being), we will now attempt to show, but first we need to understand what we mean by the term Being.

Being is an abstract noun derived from the verb "to be," or *"to exist." To exist* and *to be* are usually considered as synonymous. Being and existence are therefore in common parlance considered as having the same meaning, but in strictness of language Being is a more comprehensive term than existence. The latter word is by derivation compound, and the prefix, *ex,* signifies *out* or *from,* and the next three letters, *ist,* of Greek origin, signify to *place, set,* or *cause to stand*; hence existence really signifies that which is *caused to stand out from* something, *i. e.,* the external,

while Being includes both the external, and also the internal which is the *essence* of Being. Existence then signifies that which appears to *stand out from* the person or being who observes it. Existence is the visible or outward appearance only; Being includes also the invisible, as thought, concept, or ideas of things. Man's body *exists,* the man himself *is* or has being. This we find in the meaning of the words themselves. And this distinction between Being and existence is confirmed by the meaning of the word nature, which signifies something *born, borne* or *sustained*; and implies that nature herself had a parent, producer or sustainer. This we shall prove also by logic. Starting with the axiom already mentioned, viz:—*from nothing, nothing comes* as the major premise; or putting it in another form, viz., that *something cannot come from nothing,* and taking the fact that *nature is something,* as the minor premise, we draw the necessary conclusion that nature did not come primarily from nothing, but from some adequate cause, and that the something that at first produced and still sustains nature is uncreated and eternal, for *if created* it could not then be the *primal cause,* according to the hypothesis, from which nature sprung. Thus *by logic* have we found an uncreated and eternal Being as the creator and sustainer of nature. Our next inquiry shall be as to the character and name of this eternal Being that is the author of nature. The materialist tells us that matter by aid of law and the process of evolution has made all things. Now we reply that evolution is only a *mode of unfoldment,* or mode of development, and that evolution, therefore, cannot be the cause of anything. The word evolution signifies *"unrolling."* The unrolling is itself an effect and every effect must have a cause. The *cause* of the unrolling the materialist ascribes to law. But law, as such, does not execute itself, nor *make*

itself. A law put in execution requires both a *law-maker* and an executive power, or executor. Law does nothing. Thus is the materialist driven back to matter as the primal cause of all things. He recognizes matter by aid of his physical organs of sense, and recognizing nothing beyond matter he tells us that science can go no farther. Matter, says the physicist is the *ultima thule* of investigation. Well, then, let us now investigate matter. Matter makes up the realm of nature and is divided into three kingdoms, the mineral, vegetable and animal kingdom. Now, according to science, the mineral kingdom is the lowest and earliest formation, and from that is developed the vegetable by evolution, from the vegetable the animal, and from the higher type of animals came man. Now, the mineral kingdom according to modern science, is *dead matter. It is inert, has* no power to move, or stop moving; can only act as it is acted upon. It is divisible; can be cut up or divided into parts; has no intelligence, no feeling. Such, according to the materialist, is the creator of man and of all things that are. He sees no life or intelligence that did not spring from dead matter. Of course the materialist recognizes the forces of nature, but that force is always a blind material force, for there is nothing in his philosophy that is not material. Driven by logic to admit that the basis, or first cause, of all else must be uncreated and eternal; and confounding matter and substance, as being one and the same, the materialist ascribes to matter, so far as he understands nature, what others ascribe to spirit, or deity. *Matter* is therefore the name of his Creator. It is like the clay saying to the potter, "study thy own matchless nature, and there behold what I have formed."

But there is in science a distinction to be made between matter and substance. Matter is only recognized by one or

more of the outward senses; substance may be recognized by the soul or consciousness.

Matter is that which is visible or tangible; substance may be invisible and intangible; substance is a more comprehensive term than matter.

Substance (standing under) lies at the foundation of things; matter lies at the surface and forms the external of things. "All we know of matter," says Brande, "is its sensible properties," and the senses may and often do, deceive us; but substance is the underlying truth; the very understanding of the mind.

Matter is a term used in opposition to spirit. It is the very polar opposite of spirit. Spirit is intelligent; matter is not intelligent. Spirit is conscious; matter is not conscious. Matter is divisible and finite; spirit is indivisible and infinite, or at least, all including. Spirit is *im*material substance. Matter is created (formed anew) continually; substance is uncreated and eternal. There may be a point or line where matter and substance meet; if so, that line is drawn where matter ceases to be recognized by any of the outward senses, but this line of division may be a movable one. Substance is the essence (the being) of matter; the essential basis of all created things, but is itself uncreated. Substance has *real* being; matter is in *seeming* only. Matter appeals to the senses; substance to the understanding. These are logical statements. Substance and spirit are nearly or quite synonymous terms; both are eternal and inseparable.

We have now shown that we must of necessity assume that there is an eternal Being—a great first cause; for nothing can ever create itself. Nothing is the *absence* of all things; and in the absence of all things nothing could ever

be or exist, for from nothing, nothing comes. *We are,* and nature exists, and because *we are,* and nature exists, an eternal cause must surely be, and a cause adequate to produce what we are and what we find. Matter and blind force are poor apologies for an eternal first cause. Matter is really unsubstantial. It often crumbles beneath our feet; it has no one form that is permanent. All material forms pass away; even the so-called everlasting hills are not eternal. They pass away; but eternity transcends all time. Eternal Being cannot pass away. But how shall we know the nature of the great first cause that was, and is, and shall be and shall remain forever unchanged? By the study of self. We may know the cause by the effect; the Creator by the creature. We ourselves are effects, for we did not make ourselves; hence, the marvelous powers and faculties of the human mind must belong in greater perfection to the creative mind.

Ontology is only another and more classical name for what may be properly called *universal science.* To understand fully the meaning of the word it is necessary to know its derivation. It comes to us from the language of the ancient and cultured Greeks. It is a compound word. The first three letters, *ont,* are the root of the present participle of the Greek verb, *to be,* and signify *being,* which includes everything that is, both the visible and the invisible, for many things have being which are beyond the range not only of sight, but of any and every outward sense. Being is universal. Being is even more comprehensive than existence, for those things only *exist* which are objective; which *stand out* from the mind (or thinker) that observes them, as a rock, tree, or animal; while the mind itself, which is subjective, cannot be observed by any outward sense. The mind has being, but it has no *existence.* The mind

does not stand out apart from the thinking self. The mind with all its countless and illimitable treasures has being, but not *ex*istence. The mind *is*. Thus at the start we make a clear distinction between being and existence. All things have being, but all things do not have existence, because they do not stand out from the mind as objects of sense. This distinction between being and existence is the first lesson derived from Ontology. There is the me or I, and the *not*-me; the outward visible creation and the inner conscious self which impinges on the infinite. The *outward* visible creation exists; the *conscious self* has *being* which is of itself something more than existence. It is, was, and is to be. What this inner conscious self *is*, in its entirety, is a problem yet to be solved. Interesting as it is, we must leave it for the present, in order to complete our definition of this one word that means so much.

If now we take up the New Testament and turn to the first chapter of St. John, we read as follows:—"In the beginning was the word, and the word was with God, and the word was God. All things were made by Him and without Him was not anything made that was made." Now this *word* (which in the Greek is *logos*), which was with God in the beginning, and which was God—the Creator—forms the last part of the word Ontology. The *logos* signifies understanding, reason, power, science. It includes *all the attributes* of Deity, for John says it was God. The root of the Greek word (*log*), forms the basis of many English words and scientific terms.

Ontology is then the logic of Being; the science of Being; the solution or explanation of Being. It is universal science. There is a science or branch of science of the stars which is called, when we speak of the law governing the

planetary bodies, astronomy; but if we speak of the logic, or rational deductions which may be drawn from the appearance and motions of the heavenly bodies, then the science of the stars is termed astrology. Ontology includes astronomy and astrology. There is a science of the earth relating to its interior formation which is called geology; a science of *growing* things which was first called physiology; a science of causes and principles which is called philosophy; a science of measurements of the earth which is known as geometry; a science of man known as anthropology; a science of the divine attributes, known as theology; the study of visible and material things is termed physics; of invisible and spiritual things, metaphysics; now these and all other subjects that pertain to mind and matter, either or both, are included in the one term Ontology. It is then the substantial philosophy of all things. It unitizes all sciences of earth and heaven by showing that there is one pervading and universal mind. It removes when properly understood all fear of poverty, sickness and death.

It removes the fear of poverty not only by showing that all are really and naturally rich, but also by showing that all may have even material wealth by observing in physical, political and social relations the law of *universal being*. It removes the fear of sickness by teaching the plain and perfect way to health; and the fear of death by showing that death touches that only which hath no life in and of itself.

Ontology translates the atheist's assertion, that "God is nowhere" into the scientific assertion that God is *now here*. Ontology teaches us to distinguish between the relative and the real or absolute. The absolute is that which depends

on nothing else for its being; while the relative always depends on something else for its being, value, or importance. Nearly all words in our language are used in a relative and not in an absolute sense. A mountain is great not in an absolute sense, but only because it is larger than many other things. It is great only because brought into comparison with many things that are smaller. The hills are everlasting, not in an absolute or real sense, but because they last very long as compared with many other things of brief duration. Spirit, as applied to universal substance of which all things are made, and as the intelligent cause of all things, is everlasting in an absolute sense. Logic, which is the touchstone of truth, tells us that from nothing, nothing comes; things that have a beginning have also an end, for we cannot conceive of anything that has an end without having also a beginning. Things that have one end, have always two ends. Such is logic, and logic is the basis of Ontology. The whole is greater than any of its parts; the whole is equal to the sum of all its parts. These are axioms in mathematics, and axioms are self-evident. Every effect must have a cause, and a cause adequate to produce the effect. This is an axiom in philosophy. On self-evident truths like these is constructed the substantial philosophy of Ontology.

Facts of consciousness are self-evident truths. We are conscious that we live, and therefore need no argument to prove it; but whether we shall continue to live forever, requires proof. If immortality be a fact, as millions believe, Ontology presents to the inquiring mind, the evidence. Ontology solves the mysterious problem of evil; explains the origin of matter; the nature of mind; of soul; of spirit; it explains all miracles; what is meant by the supernatural, for no word should ever be used, and perhaps never was

used that does not have a meaning; it harmonizes science and religion; makes of all mankind one great family, and finds the key to life eternal in the kingdom of heaven (the realm of mind).

The study of Ontology (logic of Being) reveals to us the only infallible remedy for disease, and discovers to man his inner and true self as the image of God.

We live now and here in time and space as children of earthly, finite, erring parents; but with a proper understanding of the real and true self, time expands to eternity, space is lost in universal presence, and we become children of a spiritual, infinite and eternal Being whose name is love, understanding, wisdom, truth and power.

In time and space we are living *unreal* lives because we do not wholly understand. "Life *is* not what it seems." Life can only be studied, really and truly as a whole. Life as it really is, has no fragments. Things only are real when seen *as they are.* Life, as it really is, is one infinite and eternal activity of universal Being. We speak of human life; of animal and vegetable life, and may with propriety speak also of mineral life, for all things have life of some kind or degree, and all is in the *real or absolute sense,* one universal Being, in whom we, as finite beings, live.

All things are really in motion, though many things are said to be at rest. Things are said to be at rest on the earth only when they move in the same direction and at the same rate of motion as the earth itself moves. Such things are at rest *relatively,* because they move together, as one whole. So there is real rest for the soul when it moves in obedience to the divine impulse and in harmony with the divine nature; or in other words when we come to recognize our inner and true self as the child of the Infinite and co-worker with God, which is to say with the Supreme Good of all.

Being and existence have heretofore been considered by both grammarians and lexicographers as synonymous terms, but in the new gospel the word existence will be confined to the outward or material plane of being, as the term existence signifies that which stands out, apart from the mind, or ego, that considers it. Spirit, mind, force, truth, intelligence, wisdom and all eternal verities have being, but not existence. They are and always have been; but they do not stand out apart from the mind that considers them, and therefore do not exist. All things have being, but not existence. Existence belongs properly only to matter and material things.

Matter is a term applied properly only to that which is visible, tangible or perceived by one or more of the physical senses. The material universe constitutes what we call nature, but does not include mind or spirit. The latter is substance, but is *im*material. And here is the proper distinction to be made between the theist and the pantheist. The latter sees only the material universe, while the theist is conscious of an invisible presence which creates and sustains the visible universe. The pantheist, as commonly understood, is a materialist; the theist is a spiritualist (using the term in a scientific sense). The term spirit is derived from a word signifying to breathe, because the breath is the best representative of that omnipotent Force or Power that is invisible and yet sustains all life. Life is a function or property of spirit. Spirit is a boundless sea of immaterial substance beyond which the human mind with its infinite possibilities cannot go. We dwell forever in spirit, and without spirit we become as that which has not been and cannot be. Spirit is the all in all. All *essential* being is spirit. Matter is a term used only in a finite sense by finite minds. Its essential being is spirit. Matter is the appear-

ance, not the substance of being. Matter is forever changing its form or condition like the rusting iron or the vanishing wave of the sea. All forms of matter are only as blocks of ice in the boundless sea of spirit, and must be considered as dissolving views. There is absolutely nothing material that is eternal. Even the so-called everlasting hills are constantly changing and eventually disappear. All eternal verities are spiritual. Matter is evanescent. We can build temporarily of material things, but not permanently. All permanent things are spiritual. We talk of the boundless realms of space very properly for they are realms of spirit, yet space itself is finite. Space is properly applied only to that which is limited. Space, like time, begins and ends at some point or boundary. It has no meaning except as it relates to time and material things. Annihilate the things or boundary lines that always limit space and you annihilate the space itself. Let all the planets that make up the solar system be gathered back to the parent sun; what then becomes of planetary spaces? They have ceased to be. Space is the relation of things, as time is the relation of events.

Time is a measured portion of duration. It is derived from a word signifying "to cut," because it cuts the cycle of eternity. Time is finite while eternity is infinite. One is represented by a line which has two ends, the other by a circle which has no end. Time marks the limit of events as space marks the limit of things.

Time is divided into present, past and future; but the present is always a varying quantity depending upon our mental and spiritual unfoldment. When born we have no conception of time or eternity. The moment of our birth is a point of time that divides all the past from all the future, but a point has no length, breadth or thickness, and so, at

the moment of our birth the past and future meet without any intervening present. The present at our birth is only a point of time that marks the independent existence of a human form. Then behold how the present begins to expand. Soon our parents speak of the *hour* of our birth, then of the *day,* and finally of the *year* in which we were born; and as our consciousness expands we come to speak of the present century or present cycle of time. History and psychometry reveal to us more and more of the past, and intuition and the study of natural law reveal to us more and more of the future. We foretell an eclipse, or a transit of Venus because we understand the motions and order of the planetary bodies. Science and spiritual unfoldment are constantly enlarging the sphere of our consciousness and enabling us to penetrate farther and farther into both the past and the future; and as progression by constant endeavor and loyalty to truth is the law of our being, and as that law is not, like unjust human enactments, repealable, it is our privilege through all eternity to rise more and more into the conscious possession of the treasures of the Infinite, in whose presence all things constantly are, and past and future are absorbed and lost in one ever present and universal now. The mighty angel that John saw standing with his right foot on the sea and his left on the earth, and who swore by him that liveth that time shall be no longer is the progressive and unfolded soul. To the spirit time and space are annihilated.

Our *bodies* are mortal because material, but as spirits or spirit; we are immortal. We live in eternity here and now, because eternity necessarily includes past, present and future. But let us not boast of immortality, for it is not ours *as* imperfect finite beings. It belongs alone to the Perfect, and *if* we lose the spirit of truth and progress we lose im-

mortality. Immortality belongs not to the human as such, but to the divine; to truth, not to error; to the perfect, not to the imperfect; to the real and not to the seeming. We did not create ourselves, and we cannot live without the constant indwelling spirit.

Whether man, as such, is mortal or immortal depends wholly upon the accepted definition of man. Things that have a beginning have also an ending. Things that are unthinkable are also impossible; and the Creator himself cannot do impossible things. They are *no*things. So far, then, as man has a beginning he will have an end, for the mind cannot conceive of one end without another. Babyhood begins, babyhood ends; childhood begins, childhood ends; and if by manhood we mean only that which pertains to the physical body, or to the finite, erring, human soul, manhood will end; but if by manhood we mean power to overcome evil with good, love of truth and justice, or intelligence, wisdom and undying love, then it will never end, for these are attributes of Deity and constant through the ages. The imperfect man is mortal, but the perfect man is immortal. "Be ye therefore perfect, even as your Father which is in heaven is perfect." Finally as we get out of self into the perfect and universal we come into immortality.

The consciousness which comes to us in childhood and blossoms into perfect flower only in spirit, is ours only as children of the Infinite. It has a beginning in man, only as the river has a beginning in the mountain spring that is fed by the clouds of heaven. The river runs to the ocean and is lost in its waters. The river begins and ends; but the water that forms the river is not lost as it mingles with its parent waters, nor has its nature changed. It is water still. So of human consciousness. It comes to a man from the unfailing fountain of universal spirit. Its true source is not

at first recognized and we call it human. It flows on in the stream of time, expanding more and more into the past and future, the present and the absent, according to our spiritual unfoldment, until at last its earthly barriers crumble away as the spirit gains its freedom, and we realize our oneness with the Parent of all life; then *human* consciousness ends, but it ends in the recognition of the divine. But of one thing be assured, our consciousness is not less because it ceases to be human.

"The stars shall fade away, the sun himself grow dim with age, and Nature sink in years; but thou shalt flourish in immortal youth, unhurt amid the war of elements, the wreck of matter, and the crush of worlds." "So shall ye die, perhaps," says Milton, "by putting off human to put on gods."

Few have any true or definite conception of what we call self. Of ourselves we can do nothing; but we can do all things through Him that strengthens us. The wave of the sea without the ocean would be a phrase without meaning. The wave is wholly dependent upon the water for its being, so of man and spirit. The strength of which we boast is ours only in a human, finite sense. While speaking it is vanishing. We live only in spirit. "There is but one real life in the universe," and "the thread of our life without a break is ever unwound from His." "God sleeps," apparently, "in the mineral, dreams in the animal, and comes to consciousness in man." Nothing is really dead, but everything is alive, instinct with spirit, and spirit is life. We *call* matter dead because it is that state of being which is the farthest possible remove from spirit. To live in the highest sense we must get into the spirit in its higher manifestations. Man becomes truly divine when he comes to recognize his spiritual origin, assumes responsibility, and knows

and does the right. The first birth is into matter, the second, whether at death or before, is into spirit; and to be born into the spirit and become the conscious child of the Infinite is to have eternal life.

The logic of being teaches us that all real life is, in truth, and essence, uncreated and eternal; but in a human, finite sense, and in human speech, all life manifesting in organic forms, whether vegetable or animal, is created and finite. But all created life comes ever from the one invisible fountain, and every material form is but the materialization of an eternal idea; and ideas are born in heaven, which is the realm of mind. "The visible universe," says Swedenborg, "is but a type or shadow of the spiritual universe." And Milton says, "Though what if earth be but the shadow of heaven, and things therein each to other like more than on earth is thought."

With this understanding of universal being "every common bush is ablaze with God; every mountain as holy as Sinai, and every river as sacred as the Jordan."

"Gnothi Seauton"—"Know thyself," was the injunction of the Greek philosopher.

"The proper study of mankind is man," was the observation of Pope.

Another has told us, "Great learning should be used to make truth simple."

Science is systematized truth. All truth is consistent with itself; and may be said to be a unit—a whole thing, holy, complete. Whatever may be thought of is a thing (from think). A thing cannot exist that is not a fact or truth; it would be nothing. The science of numbers is the science of truth, because it deals with fixed facts or truths.

A unit is one, an entire thing; therefore complete. God is a unit because complete in Himself.

Principle signifies the *first,* primordial substance, origin, source, fundamental truth. God is, therefore, principle.

Substance (sub-"under," and sto to "stand") is the fundamental part, the reality, *not* the appearance. God is substance. He upholds all.

Essence is that which makes anything to be *what it is.* God is the essence of all things.

Power signifies ability to do; force capable of originating force.

All power is of God. He is Almighty. God is Truth. Jesus says, "I am the Way, the Truth and the Life." God is the Word. (Logos, John 1: 1), the Infinite Reason. God is love. God is Spirit, Pure Being; Understanding, Presence, Intelligence, Mind.

Mind expresses itself by *ideas.* Ideas clothed or given form are thoughts. An idea without expression would be nothing. All life is an expression or manifestation of God. All life is spiritual in essence, because God is spirit. There is no life, no substance, no intelligence apart from God. All is infinite mind; parts of one universal whole.

"All are but parts of one stupendous whole,
Whose body nature is and God the soul."

Nature is the form, the appearance, the shadow, the reflection of spirit or mind. Spirit is real, eternal; matter is temporal. "Things which are seen are temporal, but the things which are not seen are eternal."—(II. Cor. IV: 18.)

Spirit is God; man is the image and likeness of God. Life is principle, without beginnng and without end. God is Life and He dwells in eternity, not in time. Time is no ap-

preciable part of eternity. One is finite, the other infinite Life knows not death. It is of God, and is unlimited. If it had a beginning it would also have an ending. Matter is the *appearance,* a phenomenon, of spirit, of life. Death is a change of state, a phenomenon, an appearance, but it touches *not* life.

Man, by means of his body, is *in* nature, and is located in the midst of her forces, where all is necessity; where every cause is a necessary cause; but man's mind, especially his will, acts by itself, above or beyond nature, and is free,—a free cause. He constructs a house, a watch or a canal which had no existence before, and the thing he thus causes is projected into nature as a manifestation of himself. Nature, in the last analysis, is force, and force is a manifestation of will. We trace the beginning of every man's existence to the will of his parents, and we hold the will *free;* it may or *may not* act. It is as it wills. And so in like manner as a race, the beginning of man is traced to the will of the Creator, and this Creator we may know with absolute knowledge, through the consciousness of man, who is a manifestation of his Creator. The will of God, the Creator, and the will of man, the creature, is each a free cause, and can govern to the extent of the knowledge which each possesses. God is infinite, not because of His extent, but because of His perfection, His holiness, or wholeness, like the circumference of a circle. Man is finite, like the arc of a circle; but the greater is known by the less. Each is a *free cause;* nature is necessity. Every perfect thing is of God; like a circle, a square, a cube, a straight line, truth, love, intelligence; but every imperfect thing is of man.

Mind is that which remembers, which understands and receives sensations. It is not confined to place or time.

"The mind is its own place, and in itself
Can make a heaven of hell, a hell of heaven."

—*Milton.*

Mind *and* matter, so-called for convenience, make up the universe, and also man, who is an epitome or abridgment of the universe.

Mind is the *immaterial part* of the universe. The material part we call nature, or matter.

The study of mind is ordinarily called mental philosophy, and sometimes metaphysics. The term metaphysics signifies literally "after nature" or "beyond the natural." In one sense there is nothing beyond the natural, for nature's laws are God's laws, and matter and spirit are never entirely dissociated; and to him who sees aright God is manifest in nature.

"He that hath seen Me (the man of Nazareth), hath seen the Father."—John XIV: 9. When Newton saw the apple fall which suggested to him the law of gravitation, he had seen the Infinite in action.

Nature constitutes the sum total of the phenomena (the appearances) of the Infinite mind. Matter is the semblance, or form, of spirit, and when seen alone, as substance devoid of spirit, constitutes the idols of those who do not see the God within. To worship the form, nature or matter is idolatry. "God is spirit, and they that worship Him must worship Him in spirit and in truth." Nature is *not the power*, but the *symbol* of power; not the substance, but the shadow.

Every substance casts a shadow. God is substance, matter is shadow or shade. All natural forms are appearances only; images; projections; reflections; and are, more or less, one thing or another, as *mind* finally determines.

To the partial, human mind, matter and nature are convenient terms. They serve to divide this great study of Being into two parts, mind and matter, or God and nature; and, rightly understood, facilitate our progress toward the source of all power and Truth,—spirit, or pure Being. Matter, or nature, is then the outward; the garment; the vesture; the visible; that which we perceive by the senses; the impotent; the negative; the absence of power; the absence of mind. Matter is the screen which presents to us the pictures of the magic lantern in a darkened room. In this world we live in shadows constantly; we grope in darkness in the *outer, sensuous* world. 'Tis only when interiorly illuminated that we come into the real light. The sun to us is the *symbol* only of light; the outward *visible* light. The true light is substance, understanding; the recognition in all things of mind; of spirit. "No *man* hath seen God at any time"; *i. e.,* with mortal sight.—John 1: 18. (Read Job XXVIII, com. at 7th verse.)

Paul was interiorly illuminated on his way to Damascus. He saw a light from heaven above the brightness of the sun at midday. It was so bright that it obscured for three days his mortal vision, and he did neither eat nor drink for the same length of time. (Acts XXVI: 12; XXII: 11; and IX: 8, 9.)

Spiritual things are spiritually discerned.

This life is dream-life. Things are not what they seem. According to Stewart, metaphysics is a science which traces "the various branches of human knowledge to their first principles in the constitution of the human mind";—according to Brande it is "the science which regards the ultimate grounds of being, as distinguished from its phenomenal modifications."

The phenomenal modifications of being comprise what we call nature; and the study of natural phenomena (appearances) is termed physics, or natural philosophy. It is the study of the outward, the study of appearances. Appearances are often deceptive, and much of so-called science is matter of belief only. We cannot rest in truth till it reaches the understanding, or takes full possession of our being. Knowledge is our birthright; knowledge is power, and we must rest not in belief. Belief has a "lie" at its heart. We cannot trust it. "Understanding is a wellspring of life unto him that hath it."—Prov. XVI: 22. "The knowledge of the holy is understanding."—Prov. IX: 10. "By understanding hath he established the heavens."—Prov. III: 19. The understanding is the fundamental part; the very foundation of things. It is the power of perceiving; it is that which knows. It brings before its bar of judgment the absent and the present. It is therefore universal. Understanding is a natural endowment. It belongs to all conscious beings. It is the divine "Logos"; the word; the mind. Mind is not many; it is one, as God is one. In nature, being passes into appearance, and unity into variety." Mortal mind is error. It will die. The immortal mind is truth. It will never die. The human mind is partial, therefore imperfect, unholy (not whole). The divine mind is whole, perfect, holy.

Man's mind is mortal and will ever be until it comes to be in perfect unison with the divine mind. All error must of necessity die when the truth appears; as darkness always flees before the light. Man's mind, by nature or in Adam, is largely error, because he sees only in part, he knows in part, "but when that which is perfect is come, then that which is in part shall be done away."—I Cor. XIII: 10. And because man's mind is largely error it is mortal. The truth

will change it. In only one way does man's mind become *immortal,* and that is by ceasing to live in the outward; by fleeing from all error; by living in the spirit; by losing his will in the will of the Father and becoming one with Him—the Perfect, the Holy, the Immortal.

But the mind of man is the invisible man. Mind is not tangible to mortal touch. It is not heard by the outward organ of hearing. It does not report to mortal sense, except through matter; through nature; and even in matter its manifestations are phenomenal; appearances only. Appearances are unsubstantial. The essence of all things is spirit. The invisible man is the essential man. It comprises soul and spirit. The soul is the connecting link between spirit and matter. Matter constitutes the *body* of man. The body is the visible part; the symbol of the soul. Whatever the mind is the body will sooner or later show. Effects always follow causes, but more or less remotely. Time is not an element of eternal verities. One day is with the Lord as a thousand years, and a thousand years as one day. Time is finite, and is useful only to the finite mind. To the infinite mind all is present, yesterday, to-day and forever.

It sometimes takes two or three generations to materialize the mind of ancestors, but often a few seconds, hours or days only are needed to symbolize in the body the workings of the mind. The voluntary muscles instantly obey the will which is the executive officer of the mind; and the passing emotions of the mind are instantly mirrored in the lineaments of the face. The blood, under the control of the nerves which lead from the soul to the arteries and veins, makes its complete circuit in a single minute, and the entire body is transformed more or less every day. So all is under

the control of mind. It is a wheel within a wheel, as the prophet Ezekiel saw. The mind of the individual revolves within the mind of ancestors and of society, and the mind of societies revolves within the mind of the Infinite. He is all and in all, and beside Him there is none else, speaking absolutely.

The greater ever controls the less, as it is among the heavenly bodies, stars, planets, and satellites; and each is supreme over all beneath it. Man is supreme in his sphere, and when in unison with the Infinite is omnipotent; that is to say, he can do all things through Him that strengtheneth. Impossible things are never done at all; they are no things, or nothings. Now, when the lesser mind—the mind of man—acts in unison with the Greater—the Immortal Mind—there is harmony, or freedom from disease. Not that results always follow immediately, but mediately, rather, through nature, through the orderly proceeding of the Infinite mind. We sow in the spring and reap in the fall. Thinking *one* right thought does not often change the whole tenor of our life. The *momentary* yielding to the divine mind is like the broken promise of a boy, whose life is not thereby changed. The life must be harmonious as a whole. Disease (want of ease) is properly a sensation. It is pain, inconvenience, discomfort. If disease is a sensation it must be in the mind, and not in the body. It is the mind alone that receives sensations. Matter has no feeling, no power to feel, no sensation. The body is matter and cannot sense anything; cannot be *dis*-eased. It is the symbol only of disease. This becomes evident when we reflect upon the cadaver—the dead body. It is no longer diseased, but bears still the marks left by disease.

Disease, then, in its true nature, is a mental state; is in the mind. And being a mental state, *reported only* through the body, it can be removed only by some remedy which will

reach the mind and remove the cause. Purify the fountain and the stream will run clear below. "The body is like the hands of a clock, a simple indicator" of the movements within. "The thoughts and feelings" "are the invisible machinery and force that give movements to the hands;" in other words, the soul, or mind is the moving force, the controlling power. "The physical organism is the soul made visible." "The morbid condition of the body is symptomatic of the unsoundness of the mental state."

To us who do not see the invisible power—the mind or soul that governs—the soul and body *seem* as one; and we refer *to* the body that which is really in the mind. It is the spirit that quickeneth."—(John, vi: 63.)

"All physics lead to the sea of metaphysics." God is one; "matter is a multitude;—a mob of elements." Sensuous knowledge stops with the surface, and matter is all surface. We use nature wisely as a mirror only, that reflects the image of Infinite mind. It is only the external manifestation. The substance—the moving power—is invisible to mortal eye, or mortal mind, even, for mortal mind is error, and error is blind. It is the understanding alone that sees the truth.

As spiritual beings, not as man who is mortal, we are partakers of truth, of life, of Infinite mind. We are heirs and rulers over some part of God's heritage. In our mental spheres we are free, but free only to do right; to do that which will bless, elevate and adorn; not free to do wrong. In attempting the wrong we sooner or later find ourselves in contact with immaterial substance which is more real than matter; with truth which is invulnerable, immutable and eternal. While in error, or while enshrouded with mortal mind, we find ourselves fighting against God, and sooner

or later realize, as did Saul of Tarsus, "It is hard for thee to kick against the pricks." The pricks are the forces of Infinite Mind; and disease is the effect of encountering these forces. They are a barrier which no mortal can pass. They guard the entrance to death and oblivion. Our path lies outward toward the truth and the light; toward activity; toward moderation; toward understanding; toward that which is real and eternal. The mind is the substantial part of man, and Truth, more substantial than the Pillars of Hercules, guards our entrance to life and health. Matter is the external expression, the form or projection, of the invisible governing force. The form or expression will be perfect, and free from disease only when the conscious mind of man, which governs directly all the voluntary parts of the body, is in perfect harmony and accord with the Infinite Mind which governs directly all involuntary parts of the body.

Healthy and *holy* have the same signification, *"whole."* How to be holy is the question, or, How to be *whole?* The question implies that we have first an idea of wholeness of self, and therefore a knowledge of self, and resolves itself into the question, What is the I, the Ego? the self? The three great facts of the universe are Man, God, Nature, all at birth unknown. Man at first comes to himself as the first great fact. All knowledge *begins* in consciousness. There can be no such thing as knowing without the knowing faculty, which we call the consciousness. Man has such a faculty. The self, the ego, the I, is conscious that it *is* a self; we know that we exist; and we know that we know, because the knower and the known are one and the same; are identical. This knowing of the *"me,"* of self, by the knowing faculty, is *absolute knowledge.* It is absolute (free from) because it is independent of anything else, "perfect in itself." All other knowledge, except the fact of consciousness, is relative

knowledge, because it relates to other things; the *me* and the *not-me*. The "not-me" is nature; the system of created things. When we think of nature, we think of it as something *outside of us*, outside of self. We do not think of self as belonging to nature; only the body. Man's body comes within the realm of nature; but when we study it, we study it as something external to self; *it* is not the "I," the Ego, the self. Self is soul or spirit.

We cannot weigh, estimate or measure anything without a standard, or unit of measure; and the facts of consciousness are the standards by which we measure all things. The facts of consciousness and the reason constitute the mind. The facts of consciousness may be called axioms of the mind; self-evident truths. They are numerous. We mention among them, life or activity, self, intelligence, liberty or free will, identity, cause, effect, the connection between cause and effect, motion, number, time, space, force, the true, the right, the beautiful, etc. Thus we find that the mind is an independent and absolute knower, possessed of freedom, intellect and power. And the mind is the self; the body is an instrument for our use. Man knows that he had a beginning and that he did not create himself. He had his origin in the will of his parents, and the *will* is outside of nature, in the mental or spiritual realm. Here we come upon a *free cause—the will,* in distinction from a *necessary cause,* which acts because it must. The will is a free cause; it *wills,* and it *nils,* acts or forbears to act; is not bound. A free cause can call into being objects and events, and thus create space and time, which are only the relation of objects and events. A necessary cause can never begin anything. It is itself a part of the effect which is produced, or at once cause *and* effect. A necessary cause is a part of nature, while a free cause is out of nature, and is no part of nature.

"As we have borne the image of the earthy, so, also, shall we bear the image of the heavenly." "But we all, with open face, beholding as in a glass the glory of the Lord, are changed into the same image from glory to glory, even as by the spirit of the Lord." II Cor., 3, 18.

What is Spirit?

Spirit is derived from a Latin word, signifying "to breathe;" and the breath which sustains the life of the natural body is the best symbol of spirit which sustains the life of the soul. The breath is invisible, so is spirit. The breath is a part of the atmosphere which entirely surrounds the earth; so the spirit of man is a part of that immaterial substance out of which all things are made. Mark the language; spirit is substance, but it is not matter. Substance is that which "stands under" and sustains matter. Matter is visible, or, in some way, perceptible to one or more of the outward senses; the substance of things cannot be perceived by the senses. The substance of things is spirit, and "spiritual things are spiritually discerned."

Spirit is the essence of all things; it is the "I Am," Eternal Being, Jehovah. Spirit is the creative energy and forms all that the eye beholds. Spirit is universal; the all in all. It contains within it all entities, all verities, all atoms, stars and suns. It is the Alpha and Omega; the beginning and the end; the first and the last, and beside it (speaking in the absolute sense) there is nought else. All else is phenomenal; a form, expression, or manifestation of spirit. God is spirit and it is in Him, as spirit, that all things move and have their being. Man is *essentially* spirit; and his body is a form, or manifestation of spirit. Spirit is matter potentialized; while matter is condensed, crystallized, congealed, or

solidified spirit. Matter is the form, or appearance, which spirit assumes; spirit is the essence of matter; the reality of things. Spirit is the divine energy of all things; essential Life.

To spirit belongs all intelligence, life and power. Spirit associates with matter, and, in some degree, is always present with matter; and for this reason materialists ascribe to matter, life, intelligence, and other attributes of spirit. Thus, in degree, the materialist deifies matter; and the elemental atoms become so many gods.

One author defines matter as "points of force," and another says that "force is will." Thus matter becomes transformed to a faculty of the mind; and the mind is in some degree spiritual. Materially considered, as to space, matter and mind are never dissociated, for spirit is everywhere present, and spirit is by far the most essential element of mind; but, logically, mind and matter are separated widely as the poles of earth, or being. One is visible, the other invisible; one is intelligent, the other is non-intelligent; one is clothed with power, the other is entirely destitute of power, and only acts as acted upon. Matter transmits force, but does not originate force. It is for a time the receptacle of power, but not the power. All essence of power belongs to spirit. All pure force is invisible. Matter and spirit may be one to the absolute and Infinite Being, but that one is Spirit. In human speech, matter is only the name of an effect whose cause is wrapped in mystery. It remains for the human mind to penetrate the veil and solve the mystery. And the solution of this problem of mind and matter discovers man unto himself and binds him in loving union forever with the Infinite "I Am," the Spirit of all.

What is Man?

Man has been called "The fruit of the ages and the brain of the world." He is the "Paragon of animals." He lives at once in two worlds, the world of mind and the world of matter. In the one he is free; in the other bound by necessity. In the world of matter we find that part of man which makes up his physical body. The body is governed by necessity. It is always an effect, and can only be what the determining cause makes it. The determining cause is what we call the mind. And here we must caution the reader against accepting any common or preconceived notion of the mind. The mind to us is something that transcends all human comprehension; for the reason that the finite cannot comprehend the Infinite. We may apprehend, know something of, but cannot comprehend that which we call mind. Eternity, alone, unfolds it. Now, the term man includes both mind and body. As to his body, alone, "man is fearfully and wonderfully made." His body has been called a "harp of a thousand strings," but all language is too feeble to adequately express the wonderful structure of the human body. Study it carefully and reverentially if you would find the pathway of divine wisdom, love and power. Beautiful and perfect, and good for one hundred years, as the natural body is when governed by a perfect mind, it is, nevertheless, designed only for temporary use. It is only the scaffolding for the erection of a more fitting temple—"a house not made with hands, eternal and in the heavens." And as the guest is more than his raiment, so the soul is more than the outward body. The soul belongs to that part of man which we call mind and is always invisible to outward sense. The soul is organized life, and is perceived only by other souls that enter its realm. The soul, like the body, is limited, and

gives individuality after the being is dissolved of his material garb. The soul constitutes what there is of man after death, and is synonymous with what we call the *human* mind. The human mind is partial; but there is a mind that is impartial and universal; and it is this universal mind in connection with the *human* mind that forms the body and makes it good or ill, whatever it may be. Thus we come to the highest conception of man. He is spirit, manifesting in some degree, in and through what we call soul and body. He is mortal as to his body and further, as to all imperfections of soul, but as to spirit and all perfections, immortal. Such is man. And why should it not be so? God is the Supreme Good; and in His realm nothing that is imperfect can live forever. To seek truth and honor, and all perfection, is to seek eternal life.

Immortality.

That which is perfect is alone immortal. The word immortal signifies undying, and undying signifies continuance or *permanence of being*. Permanence of being allows no change. A thing changed is no longer the same thing; it is something different. The immortal, the undying, is ever the same; it knows no change. The *imperfect* is changeable. By evolution the imperfect becomes less and less imperfect; it thus becomes old and dies (is transformed) by taking on a higher form or condition, and a new name. All error is mortal; it dies when the truth appears. Darkness dies when the light appears. Time, by expansion of thought, fades into eternity, and space into universal being. All material forms change, and finally pass from human sight, but the perfect never changes; exact science never changes; truth never changes; the absolute never changes. To these, science,

truth, the absolute, the perfect, belong immortality. Human language, a mighty thing, a monumental inscription of ages of inspiration, is still imperfect, and must ultimately give way to the language of the soul on higher planes of being. One language only is perfect and immortal; it is the language of the universal Mind. The laws of Nature are its alphabet, and the human soul its tablet. The laws of Nature will bear but one interpretation at last. They have only to be known to command respect; but the laws of Nature appeal only to the intellect through the outward senses, while to many minds truth comes to the soul directly, and to all who listen comes the command, "Be just; do right." Universality and permanency belong to immortality; and until we gain universal knowledge, universal truth, universal science, universal love, and universal wisdom we shall be changeable, and to be changeable is to be mortal. God, alone, hath immortality in the highest sense, for God alone hath, in all things perfection; but man gains immortality of thought, of consciousness, and of being by gaining the perfection of exact science, of truth, of wisdom, of love, of Deity. Not as erring finite beings are we immortal, but as sons and daughters of God we are *heirs* of immortality.

Reincarnation (in flesh again).

This doctrine is held, it is said, by millions of people; and this fact, considered solely by itself, is certainly an argument in its favor. In what sense can it be true? It is often put forward as an explanation of the great diversity of talent, of moral and intellectual power, with which different persons are endowed. Different persons are supposed to have had a great variety of experiences in the different number of reincarnations through which they have passed. Some are

believed to have had few and others many reincarnations: in other words, those of superior wisdom, talent, and powers are believed to have lived many lives on this earth and have thus passed through multitudinous experiences. Now what has science to say as to the truth of this doctrine? Nothing with absolute certainty. It is a theory. Is there any other theory that will explain the facts? Some persons, it is said, seem to have glimpses of bygone times, and of strange places; some are endowed with the spirit of prophecy; and others more or less perfectly represent the characters of notable persons who have lived in the past. We might, with some reason, reply that the wonder is that the resemblances among so many millions are not greater than they actually are. The spiritualist explains all these facts by the hypothesis, or fact, of spirit control, angel ministrations, and divine inspiration. But there is another theory still that is at least worth considering. There is undoubtedly one universal Spirit, or Mind, for all things in existence point to one supreme Intelligence that governs alike in all realms of Being. This one universal Mind may include within it all finite conscious centers that we call the souls of human beings; and these souls in the ages and cycles of eternity may come, by the law of progression and evolution, to blend more perfectly together as truth is discovered, and realize more and more the great fact that all minds are in essence one, and that one the eternal and universal Mind. On this theory the *human soul* may advance, continually, from the lower to the higher condition, even to the putting on of more perfect spiritual bodies, but it is not necessary to suppose that the soul will be clothed again in mortal flesh. Pre-existence may refer, not necessarily, to mortal life in flesh, but to the immortal spirit. See Prov., 8, 22-31, and Jer., 1, 5; John, 8, 58—17, 5, and 17, 24. One *earthly* life might seem to be quite suffi-

cient. The soul may gain wisdom and knowledge in spheres *beyond* or *above the earth,* from the moment of birth.

We are not imprisoned in earth-bound shells (or bodies) on account of sins previously committed by us, as individuals, but our environment is to some degree made *for us* by our ancestors. This is called heredity. The Brahman seeks Nirvana, which is absorption in Brahm (Creator). This is only another way of saying, He aspires to the perfection of Deity, to *all* perfection. Life is eternal uncreated Energy.

The *Soul* is a center of consciousness arising within the Absolute (Spirit) and is defined or limited by a substantial form, and yet a form invisible to ordinary human sight. It eludes all chemical analysis and possesses in some finite degree the attributes of Deity.

Spirit is the *conscious* pole of being; matter the unconscious pole of being. These two, matter and Spirit (or substance and Spirit), are never dissociated, as to space and time, but only as to their properties, attributes, faculties and powers.

In common speech, mind, soul and spirit are often used interchangeably; but matter and mind are rarely confounded.

There is but one complete or perfect Mind in the universe, and the tendency of all science, all evolution, all progress, is to *unitize* all finite and imperfect minds into one grand conception of being, one consciousness, one truth of truths, one power of powers, one wisdom, one supreme intelligence, one will, one love, one Soul of souls, one Ego (I) and one source of being, and that one is Deity, God, the ever-living and Infinite Presence in whom all things have life. This life, which constitutes all life, *lives in all forms;* constitutes our identity, and is the I, the Soul, the Person, as some think.

This conception forms a basis both for the doctrine of the divinity of man, and the doctrine of Reincarnation. The one universal Mind—the Spirit, lives in *all* forms, and throughout *all generations*. The *real* I, *the real self*, is that which knows no change, for it is Truth itself, Wisdom in the highest sense, Love that is pure and universal. It is Perfection itself, and the Perfect is alone Divine and Immortal. To the Perfect, the Universal Spirit, be all glory forever, and not to finite man. We must strive to get into the Perfect, the Immortal, the Universal.

Admitting that there is but one universal Spirit, or divine Mind, and that each *finite* mind is only some partial manifestation of the one universal Mind; a twig or leaf of the universal tree of Life; a scintillation or spark of the divine Fire; a being whose identity is duly maintaind by virtue of his only, at best, partially recognized unity with the one Infinite *I am;* then it follows that the Ego, the I, in the *universal* sense, which each human being assumes to represent, and in whose image each finite human being is created, does really live through all forms, animate as well as inanimate, and so lives in millions of incarnate beings through successive ages. But even in this sense it is not the finite, but the Infinite, that animates all successive forms of human beings, and to say that the *human* is reincarnated is to confound the human with the divine, or to assume that the Creator and the created are one and the same. The only question is, what really constitutes the ego, the I, the self? Is it only a part or particle of universal being, or is it the one supreme conscious being of all things?

An Essay.

(Read before The Society of Anthropology of Chicago, May 29, 1898.)

The object of my essay to-day is to bring out, as plainly as possible, the idea that Metaphysics, rightly understood, is no less scientific than Physics; that the laws by which all things are governed in what we call the natural world extend into, and are in force in what we call the mental and spiritual realm of being; that what seems so real to the physicist or materialist is, after all, only the seeming, and not the reality; that ideas are eternal but the outward or material representation of ideas is always transitory and perishable. I ask your careful and close attention.

The subject of the essay is

THE SCIENCE OF BEING; or THE RELIGION OF SCIENCE.

We stand at the door of mystery—the mystery of Being. Let us enter and investigate. Over the portal we may read the inscription, "Put off thy shoes from off thy feet; for the place whereon thou standest is holy ground." Now the word holy signifies whole or perfect, and this injunction implies that when we come into the presence of Science, which is the perfect *method* of the Infinite Mind; of truth which is the rock of ages, of *understanding* which is the *basic faculty* of the mind, we must allow nothing to come between ourselves and the ground on which we, as thinking beings, stand, viz., the understanding which is *holy* ground, because whole, complete, and unchangeable. The temple of Being is vast and all-inclusive, for *all* things have being. How things came to be, and what is the primal *cause* of Being are problems given to all for solution. That things *are* we

know, not only by means of our physical senses, but we know by consciousness itself. Judging by the *outward sense alone* we may at any time be deceived. The phenomena of echoes, and of the reflection and refraction of rays of light by use of mirrors and lenses are familiar examples. Not the report of the outward physical sense, but consciousness is the *knowing* faculty. Seeing is said to be *believing;* but consciousness is knowledge itself. Consciousness is the stamp or seal that the one perfect and universal Mind sets on the human understanding when absolute truth is found. All Science is in itself absolute truth. True Science is indeed reality; all else is seeming. The *real* is that which *is, was,* and *shall be,* forever the same, that which is seen in its true nature. The real is the *essence* of things; the Being and not the mere *existence* of things. *Ex*istence is the outward form or husk of Being; the phenomena of Being; the appearance of material things; the fallible report of the outward senses; the judgment of the imperfect, finite, fallible, *human* mind. Existence and the more general or generic term of Being meet and become one, only on the mental plane where consciousness and understanding meet. Human sight and sense alone is not the touchstone of truth, nor the exponent of true Science. *A perfect understanding,* sealed by the seal of consciousness, is the only foundation on which the human mind can safely rest. The understanding is finally reached by two avenues; one is through outward phenomena, or appearances of being that we commonly call Nature; the other is through what some call the "subconscious mind" or direct illumination of the soul. The latter method is well known in literature as "Intuition." Intuition is the immediate perception of truth without any previous process of mental analysis or ratiocination. Intuition is, as we can conceive, the *royal* road to

learning; but it is possible only to persons of sensitive, and spiritual or delicate organization. Intuition in man corresponds very nearly to what is known as instinct of the lower animals. These are the two open *avenues* to knowledge—the sensuous, or physical—and the psychic, or intuitive. The report of neither, however, is final, as the touchstone of truth, till at last the understanding of the individual himself is reached. To suppose that the five senses, alone, are sufficient to establish all ultimate truth, or absolute science; or that intuition, instinct, impressions, visions, or dreams are alone sufficient is the great mistake of the centuries. The senses may, as we must admit, deceive us; our psychic impressions may be perverted, or misinterpreted. Dreams are proverbially uncertain, yet dreams are doubtless significant of something when rightly interpreted, and are even sometimes true. On what, then, can we rely? On what is a knowledge of science founded? We reply, all science is founded on axioms, or self-evident truths, on logic, and on facts of consciousness. We must not only know, but we must *know that we know.* Man has what may be properly called a double consciousness; the witness of the One Universal Knower or Creator *with* the finite, or partial knower, man, that he, man, the creature, has the truth. The evidence or report of the senses must ever be tested by reason, by logic, and finally by consciousness. Matter and mind are certainly to all appearance the two extremes of consciousness; one, the mind, is intelligent; the other matter is non-intelligent. One is the *knower,* the other is only what is more or less imperfectly known.

Matter, as we are told in the schools, exists in four forms, solid, liquid, gaseous and etherial; but driven into the realm of force, as it undoubtedly may be, it is no longer properly called matter, but is known as *im*material substance, or spirit.

Ice, for instance, is not water, nor is water steam; and yet the three, ice, water and steam are all composed of the self-same elements, hydrogen and oxygen; and each of these substances may be converted into either of the others. So matter and spirit *may*, in the ultimate, for aught we know, be *essentially* one, but, in human speech, they are diverse. As things change in form, character and appearance, we very properly change their names. An infant is not called a man, nor a man spirit. "A spirit hath not flesh and bones." Man has. Whatever can be recognied by any outward human sense is properly called matter; all else is more properly called Mind, Force, or Spirit. The Logic of Being (or what we may call exact science) runs, like an unbroken chain, throughout all mind and matter, from countless atoms in the outer world of Being to the central Sun of Spirit, Light, Life and Love, which is the philosopher's highest conception of what many have called by the name of God, Allah, Zeus, or the Great Spirit.

Physics (or natural science) leads inevitably, sooner or later, to Metaphysics, or mental science (something beyond the natural); but physicists, or materialists (those who confine what they call Science to visible, or sensuous objects), do not dare, or care, as the case may me, to explore the Beyond—the world of mind, soul, and spirit. They stop ever in the outward; deal only with what we call matter; see not the hidden springs of Being that *move* the great panorama of nature; enter not the inner temple where the divine Guest of uncreated Life sits enthroned; and so divorce what are, in the Logic of Being, one, viz.: Science and Religion. Religion, which etymologically signifies retying, or reuniting, is the conscious *reunion of the soul* of man with the great central Heart of Being; a birth into the consciousness of his relation to spirit; the *fastening* or anchoring of the human

being to the eternal Rock of Ages—Truth, which finally unfolds to us the divine harmonies of Wisdom and Love. Through its birth in matter the human soul (which is spiritual, but still, as many hold, organized life) is, at first unconscious of its divine inheritance. It lives at first alone (separated, apparently, from spirit), and in the outward, sensuous world of matter; "in a far country," on the outer boundaries of being, as the Prodigal Son is said to have lived. "First the natural, then afterwards, or later in time, that which is spiritual," is the natural and divine order. But there must come a time when the Prodigal shall return. He spends of his substance in sensuous, or superficial life, and sooner or later becomes famished by feeding *alone* upon the evidence of sense. The soul is born of uncreated and eternal Life, and will not, *cannot* always feed on things of time and space. It longs ever for the unfading; the Eternal; and the earnest prayer which all at times must feel for the *real,* is itself a sure prophecy of its ultimate fulfillment. But it is equally true that no prayer can be answered that is not offered, and no good can be received without a receptacle. We must prepare the soul for the reception of ALL GOOD, or, in other words, to become one with the divine Spirit, for such the everlasting Truth and its Substance has been called. God is the *essense*—the *Being* of Nature; and nature is the *ex*istence (or, *out*standing) of God. To human consciousness, indeed, "God sleeps, as it were, in the mineral, dreams in the animal, and comes to consciousness in man." But "Spiritual things are spiritually discerned;" they are not seen by outward sight, nor found among material things.

"Oh, where is the sea?" the fishes cried
As they swam the crystal clearness through;
"We've heard from of old of the *ocean's* tide,

And we long to look on the waters blue.
The wise ones speak of an infinite sea,
Oh, who can tell us if such there be?"

The lark flew up in the morning bright
And sang and balanced on sunny wings;
And this was its song: "I see the light;
I look on a world of beautiful things;
And flying and singing everywhere
In vain have *I* sought to find the air."

Lessons in Ontology.

1. What is Ontology?

Ontology is the Science or Logic of Being; universal Science. It embraces the universe of mind and matter.

2. What is matter?

Matter is condensed or congealed spirit; points of force; or a manifestation of being.

3. What is nature?

Nature, as distinguished from spirit, is the *visible creation;* the material universe; the phenomena of Being.

4. What is Spirit?

Spirit is pure Being; immaterial substance; an indestructible essence; sublimated matter.

5. What is soul?

The soul is incorporated spirit, or organized life; the basic stratum of mind; the astral body; that which dreams; the seat of the appetites and passions.

6. What is mind?

Mind is the thinking principle; that which remembers, un-

derstands and receives sensations; a generic term embracing soul and spirit. The soul as such is finite, but the spiritual part of the soul is infinite.

7. What is man?

Man is soul or spirit individualized by the human body, and human mind.

8. What is substance?

Substance is that which "stands under" and sustains all; the foundation of things; the underlying truth; understanding; Infinite Mind, or Presence.

9. How many perfect minds in the universe?

The Infinite mind is alone perfect. All other minds are partial and imperfect.

10. What is mortal mind?

The erroneous mind is mortal. All error must die at the approach of truth.

11. How is the human or imperfect mind limited?

The human mind is limited in knowledge and wisdom, but not by the body or by the senses.

12. Where does the mind dwell?

The Infinite Mind dwells everywhere at once and constantly; the human or partial mind dwells where it pleases.

13. What is the understanding?

Understanding is the substance of things; that which knows; pure Being; Spirit.

14. What rank among the faculties of the mind has understanding?

Understanding is the substance of mind; the supreme intellectual faculty. Understanding gives wisdom and power to the soul.

15. What is consciousness?

Consciousness signifies "knowing with." It is the sanction of the Infinite Mind; the Spirit witnessing with our spirit that we have the truth.

16. What is the Holy Ghost?

Holy Ghost signifies "whole or perfect spirit," and is only another name for the Infinite, perfect or immortal Mind.

17. Can man know God?

If to know is to comprehend fully, then we know nothing, even of ourselves, for human life begins and ends in mystery; but if knowledge be apprehension, then we know as certainly as we are.

God, the Creator, by reason of His perfection, is unchangeable, and on the immutability of His word and ways, science is made possible. What we can prove true in science we know. We also know all facts of consciousness by witness of the Spirit. Through these and science we come to know something of ourselves, and by becoming acquainted with our inmost self, which is made in His image, we may know the original.

18. What is health?

Health is soundness, wholeness, holiness.

19. What is disease?

Disease is want of ease; pain or discomfort; absence of health.

20. Is disease ever in the body, per se?

No.

21. What is that which we see upon the body, or in connection with the body, which we call disease?

It is the symptom, sign, or manifestation of disease.

22. What proof have we that the disease cannot be in the body?

The body, *per se,* cannot feel; has no sensibility. It is the mind that feels.

23. Why do we ever refer disease to the body?

Because we mistake the manifestation for the disease.

24. How many diseases are there in truth?

One. Disease in a unit. It is always pain, or discomfort. Its manifestations are various.

25. How can man be healthy?

He must be holy (whole). His mind must be in unison with the Infinite Mind; must know and live the Truth.

26. How many avenues to Truth?

Two; the outer and the inner. The one is through the senses, the other through Intuition. Intuition is the royal road to learning.

27. What are the laws of nature?

The modus operandi of Deity; the divine method of government.

28. What is science?

Science is knowledge of the perfect way.

29. What is faith?

In the true sense, faith is more than belief. Belief is trust in the opinion or statement of another. Faith is trust in the truth only. Belief may mislead, but true faith never. Faith is belief changed to certainty; complete conviction. "Faith," says Guizot, "is a conviction wrought by superhuman means." "Faith, says Pascal, is God sensibly realized by the heart—the inward consciousness of truth—"the substance of things;" understanding. Faith is fidelity. "Without faith it is impossible to please God." Heb., 11, 6.

30. What is the proper office of the senses?

To report to us the phenomena (appearances) of nature, and bring us into relation with the outward world.

31. Do the senses ever deceive us?

Yes. The mirage, the echo, the distortion of a pole partly immersed in water, and the apparent motion of bodies at rest, are familiar examples.

32. Upon what can we rely if not upon the senses?

On reason and intuition, or on understanding.

33. What is Intuition?

The spiritual perception of Truth. It is the royal road to knowledge.

34. Is there any such thing as physical causation?

As all action originates in thought or feeling, all *primary* causation must be mental.

35. What is motive?

That which moves, and gives birth to action.

36. What relation has the human mind to the One Perfect Mind?

The relation of the finite to the Infinite; the imperfect to the Perfect; a part to the whole; a child to its parent.

37. What is mortal mind?

Erroneous mind. All error must die, as darkness flees before the light.

38. What is immortal mind?

A mind free from error. Truth can never die.

39. What is death?

A change of state; a liberation of spirit, of soul from matter; a termination not of Life but of some mode of being.

40. Can death affect life (the essential principle of being)?

No more than darkness can affect light, or error, truth.

41. What, then, can death affect?

Existence only; the outward appearance of Being.

42. Are material forms ever permanent?

Never. Eternal verities are found only in the mental or spiritual realm.

43. What is the origin of matter?

Spirit. It is spirit made visible, as water and ice may have origin in steam which is invisible. Spirit is the all in all, and matter is a name for that which seems far removed from spirit.

44. What is Heaven (heave-n)?

An exalted place or condition. The stars are in heaven because high above the earth. The mind is the kingdom of heaven because high above the physical body; and the mind from which all error and sin is banished is the kingdom of God.

45. What is phenomenon?

A remarkable appearance, like the Northern Lights.

46. What is evil?

Evil is a negative term implying the *absence* of good. There is no such thing as absolute evil. 'Tis a relative term for use in human speech.

47. What is sin?

Sin is transgression of the moral law, a departure from the divine law.

48. What is the cause of sin?

Imperfection of mind is the cause of sin. The perfect mind never sins.

49. What is the effect of sin?

Weakness, failure, pain, sickness and death.

50. What is time?

Time is a measured portion of duration.

51. What is eternity?

Eternity is unlimited duration. It is like a circle, without beginning or end.

52. What is thought?

Thought is a movement of the spirit independent of the conscious, finite mind. It originates beyond the sphere of the mind receiving it, and stamps its impress upon the memory.

53. To what does disease belong?

Disease belongs not to the spirit which is perfect, nor to the body which is senseless, in itself, but to the soul, which is the moral plane of human life.

54. What is life?

Life consists in the animation of matter by spirit, or the manifestation of spirit through matter.

55. To what is the body of man subject?

The body is subject to the soul of man, and will be perfect or imperfect as the soul advances in knowledge and wisdom.

56. What is right?

Right, in the absolute sense, is doing what will promote the highest and best good of the race; but relatively, that is right which will satisfy the conscience of the doer.

57. What is the supernatural?

The supernatural is that which is *above* or *beyond* the natural (the outward, visible appearance), but not contrary to nature. All manifestations of mind are in the true sense

supernatural, as they always transcend the visible or outward realm of being.

58. How can man become immortal?

By dying to self and living to science and truth, which are the ways of the perfect immortal mind. No mind that harbors error and imperfection can continue forever. It must change when truth and beauty and wisdom and intelligence appear. Naught but the perfect can endure forever. The perfect is imperishable. "Be ye perfect as your Father in Heaven" (the highest life) "is perfect."

59. Is it possible to avoid all physical suffering?

Only by avoiding all error on the physical plane of being.

60. Is it possible to avoid all mental anguish and disquietude?

Only by avoiding all error on the moral plane of being, which is the soul-plane.

61. Is perfection possible?

Relative perfection is possible when we live in obedience to the highest truth perceived.

Lecture on Natural Law, Science and Evolution.

(Delivered by the Author at East Calais, Vt., May 28, 1871.)

To the student of natural science there is nothing so firmly impressed upon the mind, as *the universal and constant operation of undeviating law.*

We live in a world swarming with life, both animal and vegetable; 100,000 species of plants have been recorded and over 60,000 species of animals. Wilson, in his ornithology, speaks of a flock of pigeons one mile wide that darkened the sun for *four hours.* Then there are innumerable shoals of fishes and swarms of flies dancing in the sunbeams. Man, ob-

serving all these, inquires, whence came they, and how came I into existence? By the operation of law or by the exercise of miracle? The most intelligent minds believe that this planet itself came into existence by the operation of law. The law of gravitation, combined with the motion of the earth upon its axis has given us its speroidal form; the action of superincumbent waters has developed the successive strata of the earth's surface; the law of crystalization has formed the minerals and precious stones; while granite and metamorphic rocks speak of volcanic action, or an intense degree of internal heat.

The thunder and the lightning speak of the operations of electricity; the tornado of atmospheric changes; the earthquake and the volcano of the cooling crust of the earth, and the surging waves of its deep internal fires. Everywhere law, miracle *nowhere*. And even to solve the mystery of life 'tis ignorance alone that calls for aid of miracles. The law of vital force forms organic bodies as naturally as attraction and cohesion form a planet. Prof. Wyman, of Yale, and Clark, of Harvard colleges, have demonstrated the fact of spontaneous generation. This gives infusorial or primordial life. Then the law of variation and hereditary transmission gives the species. Dr. Hooker said the element of mutation pervades the whole vegetable kingdom.

Thus we find that the great Spirit of the Universe works by law, and without law is nothing done or made. Of this great spirit we have as yet comprehended but a single step, but we have an eternity in which to increase our knowledge. The man who is self-sufficient in knowledge and wisdom we deem foolish, but not more so than the one who says we can know nothing, and must blindly depend on miracle to account for the phenomena of life. In the fœtal development of man his kinship to every creature that lives is made ap-

parent to the physiologist. The metamorphic growth of the frog is a case in illustration. As fish existed ages before reptiles, every reptile in its development goes over the same ground, and is first a fish. The human embryonic brain first assumes the shape and proportions of a fish, then of a reptile, next of a bird, and lastly the brain of a mammal, to which class man belongs. Thus only by process of development can the reptile and philosopher be distinguished. There is a spirit in man and not less truly in the fish—his distant progenitor. And his resemblance to this progenitor is much greater than many suppose. Both have two eyes, both a heart with blood circulating therein; the fish has four fins, man four limbs; the fish is covered with scales like the tiles upon a building, and so is man, as the microscope reveals. The resemblance is more than the difference between other animals and man. He is the trunk of the tree of life, whose roots extend to the lowest order of being. Shall not the fruit of the tree be gathered on some fairer shore? To this question what says science?

It is an axiom in science that all the objects by which we are surrounded in nature and all the various changes which are observable therein, whether visible to the naked eye or perceived alone by the aid of the telescope and microscope, are attributable to two principles, matter and force. By matter we understand that which affects the senses; by force the power which produces the changes that we observe in matter. It is equally evident that we cannot imagine a force, without at the same time conceiving of some substance against which it is exerted; hence the two ideas, matter and force, are co-existent in the mind, and a clear and definite conception of these ideas constitutes all that is or can be known of science. Now, scientists have very generally adopted a theory of matter known as the "Atomic The-

ory." This theory supposes the universe to be occupied by atoms, inconceivably minute, hard and unchangeable, separated from each other and governed by the laws of attraction and repulsion. These atoms fill all space, under the name of etheria or ether, and constitute all grosser forms of matter, such as compose the earth, planets, sun and stars. These isolated bodies of grosser matter act upon *each other,* both by the law of gravitation and by vibrations of the more subtile ether, which radiate in every direction from each body as a center; and these vibrations constitute light, heat and other emanations, which we recognize as coming from the sun. Thus, according to Prof. Loomis, this etherial medium, or ether, must be regarded as a constituent element of all ponderable bodies, and that what we have been accustomed to call analysis, is such only in part, so that the entire formulary of chemistry will have to be recast. These are the deductions of science. And further, matter, though constantly changing its form, is of itself, in its essence (or substance) indestructible and eternal, making it as absurd to speak of a God without a world as a world without a God. And so, also, with force, it is incapable of increase or diminution, and the same absolute amount of force exists in the universe at all times and forever. Force manifests in various forms, mechanical, or physical, chemical and vital; yet science has already determined that all forms of force are mutually convertible one into another. This mutual convertibility of the various forms of force science terms "The correlation of forces;" and the invariability of the absolute amount of force, amid constant change, the "conservation of force." By this law of correlation of forces a pound of coal, or a cord of wood, may be measured as so much sunshine, and the strength of a horse by so many pounds of coal. This correlation and conservation of force is now regarded as

one of the grandest deductions of science and almost a self-evident truth. The planes of matter are three, viz: the mineral (plane of chemical compounds), vegetable and animal; and for the elevation of matter from each plane to the plane above there is a special manifestation of force. It is the special province of chemical affinity to combine the elements as found in the mineral kingdom; an additional, or peculiar manifestation of force is required to raise matter into the vegetable kingdom, and again a still higher force develops *animal* life; and it is impossible to pass directly from the lowest to the highest group without passing through the intermediate group. Thus it appears from the deductions of science that, so far as gross matter is concerned, man is the ultimate in the design of *earthly* formations; and that the earth and all intermediate existences upon it were wrought into being because necessary for the production of man. In each successive step the decomposition of lower forms of matter is made available for the elevation of matter to a higher plane.

So far science. But the next step in the great law of progress which science traces so clearly through countless ages up to man as a physical being, is left to philosophy and inspiration. Standing thus upon the apex of the outer world, as the creature of the law of progress—the inference is legitimate, reasoning by analogy, that if *there is* aught within the human form that appropriately connects itself with a still higher plane of existence than belongs to the more animal man, that principle, whatever it may be, must likewise continue the creature of the same great law of progress that has thus far shaped his surroundings and destiny. We are thus warranted in deducing the hypothesis that the law of progress extends across the grave; and that if man lives at all in the future, he must still continue to be

subject to this law, along the brightening pathway of still increasing beatitudes.

We have already referred to the existence of etheria as a constituent element of all grosser forms of matter. This idea is essential to the harmony of science, itself, for otherwise the fact of isomerism cannot be satisfactorily explained. Isomeric compounds are made up of the same elements in precisely the same proportions, but their properties or qualities are different. According to Liebig, the essential oils of Lemon, Juniper and Rosemary, have all the same elements and in the same proportion, but differ widely in taste, odor, boiling point, and specific gravity. This unexplained difference of quality, Prof. Loomis accounts for, by the different amount of etheria as a constituent element of each compound; and that all grosser matter becomes refined and elevated in the scale of existence by each accession of this more refined element. Now if the deductions of science be correct that this highly sublimated and subtile form of matter interpenetrates and permeates all grosser forms, then the food that builds up and sustains the physical form of man, also contains etheria, or spiritualized matter which may certainly go to form and build up within this human frame an ethereal organism or substance which we may term the *soul.*

And so the language of Paul becomes scientific and demonstrable, that "there is a natural body and there *is* a spiritual body." Hence, we can realize the organic necessity for a material mould for the shaping of the ethereal casket, in which the intelligent principle gathers the experiences of time, preparatory for the duties and the beatitudes of the future. And as a natural sequence, the appreciative philosopher is no murmurer at the events of life. Let the hand of misfortune fall ever so heavily; let envy and malice and hate

assail; let sorrow, disease and death prevail, he knows from this beautiful philosophy of a nobler manhood and womanhood; that these are the incidental conditions of the universally operative law of progress, under which he is building up a beautiful ethereal encasement, in which that divine emanation from the Almighty Architect of the universe, the individual soul, is destined to outwork the unimaginable destinies of a blissful immortality.

As the artist sometimes uses a model of clay for the production of a more beautiful figure of gold, so, the Divine Artificer makes use of the body for the production of a more beautiful organism, adapted to higher relations when time shall expand into eternity by larger conception of thought. Through organic law the soul, equally with the body is formed, and when fully mature, then by organic law, the hammer of death descends, the outer covering falls away and mingles again with kindred elements, whilst the celestial organism of interior thought and feeling enters the realm of more enlarged activities and divine possibilities, removed at once from the earthly studio, to the frescoed galleries of the Divine Artist.

SPECIAL THERAPEUTICS.

(In this part of our work we shall introduce some of the best of old-time *material remedies* [so-called], not for use when other and better means are known, but that they may be avoided, as rocks and shoals are avoided by sailors who consult corrected charts.)

Air, food, and exercise form the trinity of health. Sunlight, also is essential to vigorous life. As to essentials when understood, all intelligent physicians must agree. It

is only in regard to *non*-essentials and the unknown that medical men *dis*agree. They disagree at present as to the use of drugs; vaccination; animal food; spontaneous generation; the primal cause of disease; in diagnosis (distinguishing the nature of the complaint); in treatment; in regard to the propriety of surgical operations, oftentimes, etc. Now these subjects of difference are vastly important, and though not always absolutely essential to life they are nearly all essential to healthy life, but not understood; and it will be the aim of the author to help the people to decide for themselves some of these questions which medical men at present seem unable to settle. Let us bring to our aid, for we shall need them, logic and sterling common sense. Read slowly and thoughtfully. We must know for ourselves. We don't want to swallow a fatal dose of poison because it is *called* "medicine." We do not want to depend for health upon doses that will make any person sick. It is not quite reasonable to implant in our bodies, or inject into our veins, the very exuviæ of disease, to prevent or cure that disease. We do not want to submit to surgical operations that we should be vastly better without. And if we would avoid these mistakes which are now made every day, and many times a day, we must understand for ourselves. In presenting the study of medicine, or art of healing, *to the whole people,* we are doing more, as we believe, to make its practice scientific than the profession itself would ever do alone; in fact, there *is* no other path to scientific practice. Nothing but the combined intelligence of the whole people in all countries can ever make the practice of medicine what it ought to be. Let us first endeavor to understand what medicine is, and then compare it with our own ideal of health and physical perfection.

The leading schools of medicine not only blind the people

with false ideas, but blind themselves. They ignore the mental origin and mental nature of disease; find no adequate cause for the vital phenomena witnessed in the body, ascribing them to the body itself; attempt to prevent disease by efforts or means tending to induce it; and to cure patients and save life by the use of many material agents that naturally destroy life.

Disease is not an enemy or an entity; that is, it has, as such, no physical existence. It is a condition, a sensation, a report of injury or danger, an effect, a reparative process, a friend; and *as* such it should be treated, and not as an enemy that has physical life to be destroyed.

If it is the result of injury, and the cause acting suddenly has ceased to exist, all that can be done for the benefit of the patient is to make all attending circumstances favorable, and leave the reparative process to nature. But if the disease is the result of a cause still operating, then it is folly to expect a cure until the cause be sought out and removed. The great cause of all causes of disease, first or last, is ignorance; but the more immediate physical causes are ten in number, viz.: *First,* hereditary transmission or a depraved organization, generally called hereditary disease, and which proceeds from the misconduct of progenitors. *Second,* improper dietetic habits, food of unwholesome quality, or taken irregularly or in excess. *Third,* poisons. *Fourth,* too severe bodily or mental toil, or its opposite, inactivity. *Fifth,* extremes of temperature. *Sixth,* undue excitement and indulgence of the animal propensities. *Seventh,* disappointments. *Eighth,* want of sunlight. *Ninth,* irregularity. *Tenth,* mechanical injuries.

In the cure of disease time is an important element, especially in cases of hereditary disease. The principal diffi-

culty consists in changing the habits and environment of the patient. An erroneous opinion prevails, that disease is governed by laws entirely different from those which govern in health. This false opinion in the profession, has given rise to the term pathology (study of disease), in distinction from physiology (study of health, or healthy action). All action is healthy under the circumstances, and if we want better action we must make conditions better. There is no good basis for the above distinction.

Nature always does the best she can under the circumstances, and the more favorable the conditions the better the result. In the vegetable kingdom, if the soil and other circumstances are such that she cannot grow corn, she can, perhaps, produce a growth of mushrooms. If small fragments of rock obstruct the perpendicular or vertical growth of a plant or vine, it creeps along horizontally till it passes the obstruction; but the life power within the germ is the same, and it puts forth all its effort to reach the atmosphere and light, that lie equally and with the same attractive power above the obstructed and unobstructed germ.

The circulation of the blood is called a physiological or healthy action; its stagnation, as in inflammation, a pathological or unhealthy action. With equal propriety we should call the regular and silent current of the river that turns the water wheel, a healthy action, and the same stream forming a lake by being obstructed with floodwood or by volcanic force, a diseased action. The one is as necessary as the other under the circumstances, and both are governed by the universal law of gravitation. But the conditions have been changed, and if the entire stream has been turned or dried up, the mill below must cease to work. But if the current is only partially obstructed it very soon rises above, and flows on as before. All things are governed by unchanging

and undeviating law. Now inflammation, or stagnation of blood in the system, is always a perfectly natural event under the circumstances, and, when partial, is generally a reparative process to build up anew some injured part, and when general and destructive of individual life, is still calculated to subserve the public good, and preserve the life of the many by quickening human foresight to shun the shoals and quicksands, the Scylla and Charybdis, that threaten to engulf us.

Again, it is generally considered by those unacquainted with the delicate machinery of the human system, that the more dangerous the condition of the patient, the more violent must be the medicine administered. So far from being true is this, that the reverse would be more correct as a general principle. A healthy, robust man will bear more violent drugs and more severe usage, than a feeble patient. And in cases of great debility, or of great nervous susceptibility, slight causes will sometimes suffice to turn the scale.

The confidence that the people place in drugs is fallacious. The utmost that can be done in any case for the cure of disease, is to make all conditions favorable for recovery. The human stomach is not a crucible for man's experiments. A diviner chemist resides within, and works by laws that are superior to the laws of the elemental kingdom, as understood by man. God's chemistry cures; man's chemistry sometimes kills. The superiority of vital action to that of chemical, as at present understood, may be seen by a single illustration. Chemistry, as at present understood, detects no difference between the phosphate of lime, which is taken from the earth as a mineral substance, and that found in the bones of animals. But plants, or vegetable life, make a distinction at once, if the quesion is put to them, rejecting the one as aliment for their growth, and readily appropriating the other. The gradual gradation and elevation of matter from the ele-

mental kingdom, through the mineral and vegetable kingdoms, must not be lost sight of in the consideration of the structure of man. The vegetable kingdom is the great organizer for the animal, and from the higher kingdoms alone, the vegetable and animal, man properly seeks his food.

We repeat, drugs are fallacious. And medicines, as defined by the practice of so-called experts in the healing art at the present day, are largely poisons. All nervines, all anodynes, and all resting powders of whatever name or character, are poisonous in proportion to their power of subduing pain. This and all other physiological facts ought to be widely known. Pain is healthy. The resting powder is deadly and deceitful. The remark of Emperor Napoleon I., to his physicians, is worthy of lasting remembrance: "Do not counteract the living principle."

Since the days of Harvey, it has been commonly supposed that the heart circulates the blood. And indeed it is largely the instrument through which, and by means of which, the blood is propelled; but the heart is not the moving power. The blood is propelled through the heart, arteries, capillaries and veins, by the impulse given to all these vessels through the nerves. It is the soul, or spirit, that is ever present that controls, not only the circulation, but every part and fibre of the body. Let it never be forgotten that the entire body is an instrument of the soul, and that every part is constructed upon mechanical principles, strictly so; and as a beautifully delicate, useful and complex machine, the body should be carefully guarded and protected. Through the nervous system and the organs of special sense, the soul comes into relation with the external world, and thus gains that experience which is called in mental philosophy, primary knowledge.

The complexity of the body, its utility, its beauty, when well preserved and properly animated by intelligence, none will doubt. But how to preserve its use and beauty, is not generally understood. This important knowledge must be gained by study. Physiology is the study of vital phenomena. A phenomenon is an appearance—a remarkable appearance—and one whose cause is somewhat obscure. Hence the study becomes intensely interesting, for there are no phenomena so interesting as those presented through organized bodies.

The structure of the lower animals is much less complex than that of man, and thus by comparative anatomy the uses of the several parts are more readily comprehended. Man stands at the apex of the animal kingdom. He is a microcosm, an epitome of the universe, a miniature God; infinite in complexity of structure, and infinite in capacity for mental and moral improvement. With him to be physically and morally healthy, is to be beautiful. Health and beauty are synonymous. The desire for beauty is felt wherever palpitates a human heart, and the admiration we bestow upon a perfect human form, is a feeling akin to worship. We reverence instinctively that largeness of grace, that perfection of motion, and of life of which our nature is susceptible.

Nature's laws are divine, and the claims of religion demand that we mould the manly and womanly form in symmetry and grace. They demand an erect form and carriage, a lithe and graceful figure, a well-expanded chest and lungs, and a full development of the muscles. Deformities of body must needs deform the mind, since the soul's experiences, through an imperfect instrument, cannot be strictly full and natural. Next to life, health is the greatest blessing bestowed on man. Perfect health is rarely attained. It is rather a beautiful ideal that ever attracts us. Attraction,

says a great philosopher, is in proportion to destiny. Now man desires, or is attracted toward wealth, health, knowledge and happiness. Let him live in harmony with Nature's laws, and these are all his own. Health is the normal condition of the race. The signs of perfect and permanent health are beauty, activity, strength, energy and happiness. Beauty is the robe of divinity, and has no fellowship with disease. "The Beautiful," says Goethe, "is higher than the Good, for the Beautiful includes the Good within it as a part."

At the court of the first consul, Madame de Stael was the most intellectual, Madame Recamier the most beautiful. The talents of the former brought her fame rather than love; the latter brought every one to her feet by her beauty.

It was beauty that inspired the pencil of Raphael and the chisel of Michael Angelo. It was the last word of the immortal and profound thinker, Plato. Now the source of beauty is health, and the loss of the former is often the forerunner of the loss of health. Be not satisfied with freedom from pain, but seek to be beautiful. The stream does not stay forever by its fountain.

Progress and development alone will answer life's great end. Beauty called into being by the genial warmth of Goodness, and invigorated by the soft radiance of joy, expands into perfect flower only in the bland atmosphere of Love. Love is Nature's grand cosmetic. It has power to transfigure every form in which it is incarnate.

To obey God, to follow Nature, and to live in accordance with physiological laws, is one and the same, and in doing one we do the other. Says Paul, "I beseech you, therefore, brethren that ye present your bodies a living sacrifice, holy and acceptable unto God, which is your reasonable service." "Know thyself," said a Greek philosopher, descended from

heaven to be engraved upon the tablets of enduring memory. And surely if life be valuable, then knowledge that teaches us how to prolong it and augment its capacities, is also valuable. But where can we find such knowledge? In the study of the structure, organs, and functions of the human body. An imcomprehensible power, which we call the vital principle, pervades all nature. We everywhere behold phenomena, that announce its presence under an infinite variety of forms and modifications; but in the highest degree of perfection, of sensation, and of form, it appears in man. And the contemplation of the human structure has, in all ages and among all nations, called forth deepest emotions of wonder, admiration and thanksgiving. Poets, statesmen and philosophers, have borrowed from it their most beautiful tropes and figures.

It is a universal law of Nature, that the greater controls the less. In accordance with this law, man has control of his body, but his relation to the Universal Spirit will ever form a theme of earnest inquiry. The nerves are the handle of spirit, the brain the organ of thought. But, what thought is and what is the nature of the connection between spirit and matter, is a subject that the angels may well desire to look into. It has eluded, hitherto, the observation of man.

Thus physiology treads the verge of matter and spirit, and inquires concerning their mysterious union. It gives true stereoscopic views of the laws and phenomena of life, health, disease and death. And upon the beneficence and power of the Divine Architect, we predicate the ultimate triumph of true science over every form of disease. But we look not for hasty results. Seasons must come and go, disease invade our homes and poisonous drugs do their destructive work for centuries, robbing the earth of beauty and loveliness. But the wheels of progress cannot be blocked,

like the ponderous car of Juggernaut, with human victims. We need only the true philosopher's stone that can transmute ignorance to wisdom, vice to virtue. Sickness and disease will yield to the mental illumination of coming time.

The beginning of every organized being, from the simplest vegetable to the highest animal, is a simple microscopic cell. It may be developed into a toad-stool or an oak, a worm or a philosopher; and at this stage of its progress, it is impossible to distinguish by its physical properties, the one from the other. Yet in this microscopic germ, concealed in this simple watery cell, is the vital principal that guides its future life.

Each of the myriad cells of the body seems to have a birth, life, and death of its own, for change is constant. The individual cell dies and another takes its place, while the body lives on. So with the race. The individual dies, the race still lives. One life pervades all; one universal spirit governs all. All is mystery; but in our consciousness, or power to know, we hold the key that shall unlock the world's arcana.

Health, as generally regarded, is the antithesis of disease; but in the highest sense health is something more than freedom from pain. It is wholeness, or holiness, of mind and body. It implies perfection of growth and function. It contains the idea of improvement or advancement to higher state of being. It is derived from the word heal, and signifies improvement or growth. No one enjoys the best health, or ever can, who neglects the best opportunities for improvement. Health is the promoter of virtue, the goddess of high mental and spiritual attainments, and the physician or therapeutist who loses sight of the soul or mind has lost the secret of his art. (By the term soul, or mind, of man we mean the invisible part of man, in distinction from the body, which is visible.) The instrument, or body, is to be cared

for, indeed, but not so much as the soul. The engine is important, but an intelligent engineer is still more important. The body is best preserved from decay, not by pickling or saturating with poisons, but by making it a desirable residence for the indwelling spirit. The essential man within that fashions and uses the body is to be consulted rather than the body, but the body is not to be neglected.

To be able to give names to the physical symptoms of disease is far less important than to know the cause of disease. We must treat, not symptoms, but the patient. Disease is certainly cured (ended) to all physical appearance, and all pain relieved by killing the patient outright, but such cures, *if known,* would not so often be desired, or allowed. In the *true* practice of medicine the art of prolonging life *and* the art of healing will no longer be divorced. We shall not in the future remove pain at the expense of life, health or vitality. Our remedies will be exhausted in *removing all hindrances to health* and inspiring the soul with earnestness to complete the full natural period of its earthly career. We shall understand that the laws of heredity point not to the irretrievable past, but to preparation for the future. Our children's children will be made to portray the nobleness, beauty and virtue of our own lives. Ages and nations, as well as individuals, are all indissolubly linked together. To the intelligent every incentive is to virtue, and not to vice; to good and not evil. To think otherwise than this is to impugn the character of the Universal Mind. And if intelligence leads to virtue, it follows that the withholding of intelligence from the people is a moral obliquity.

It is certainly not in keeping with the dignity and position of an honorable profession to withhold from the people a knowledge of what it is that secures health, or cures disease.

The art of living can be universally taught and taught as a science. By what right can any class, or profession, supposing it possible, seize upon the beams of the rising sun and prevent their flooding the valleys below? The rising tide of intelligence among the people at large will bear all noble minds and personages to greater heights. No one member of society can ever, really and truly, be a loser by the widespread diffusion of all valuable and practical knowledge; but every one is in some degree a loser in proportion as ignorance prevails. Let ever the best facilities be offered for the most rapid acquisition of all valuable truths.

The study and practice of medicine is now buried by technicalities in dead and foreign languages which debar the common mind from successful investigation. These languages, in addition to one's own, must now be mastered in order to understand Medicine as usually taught. This is disastrous to society and is also a perpetual bar to progress. Any branch of science or art under such conditions of repression will wither and die; and as a science—worthy of the name—medicine is already dead. It must be recast.

Truth, so valuable in sanitary and medical science, most of all requires a universal language; for surely health belongs of right to all; and the cure of disease depends upon the same laws and principles as the preservation of health. As we have no universal language yet established we shall endeavor in this volume to explain in as good English as possible the essential principles of medical practice; the most common technicalities of the art, and the best, surest and safest means of cures as known to-day. It is intended as a common text-book for patient and physician; a work for all classes and conditions of men.

We are all aware that life is short, and we must of neces-

sity omit many branches of science and knowledge in our investigations here; but the preservation of the body is the key to the whole situation; and if we neglect that, we impair our faculties and mar the fruit of our labor in every sphere of life. We may reasonably leave to other days, and perhaps to other states of being, much that other minds have learned, but we cannot safely leave the bark of life to drift without chart or compass amid the shoals and rocks of earthly existence. In unknown waters we must have a pilot, but the pilot cannot accompany us the entire voyage. We must learn the art ourselves, or make shipwreck of many earthly opportunities freighted with precious treasures.

There are *many* reasons why we should devote time and money and give special attention to the ART OF LIVING—and when we say "art of living" we mean it to cover the whole period of our existence, whether sick or well; in other words, we mean to say that we must add to our course of study for every individual, medical and sanitary science, or what is the same thing, a health education.

A strong reason why the people need to investigate and understand medicine for themselves is because we have today no true science of medicine, and are not likely to have until the people investigate the matter. The profession will not reform itself. It is the candid opinion of more than one well informed on this subject that the practice of medicine has retrograded for the last forty years. It takes no important step in advance unless compelled by the people. It bled patients until they would no longer submit to it. It gave calomel till they would no longer take it. Lately it has introduced several new and dangerous drugs as remedies, and we may say in all sincerity that the present prevailing practice *is not safe.* The people must know for them-

selves. No other knowledge will prove so valuable as a knowledge of self. It will save life for many happy years. We bear no ill-will to the profession. It is unfortunately situated, and we would rescue it from degradation. It will be better for all concerned, doctors included, when all are well taught in this matter, and doctors are employed as they were originally, purely and simply as TEACHERS.

Dr. Sharp, in "Homœopathic Tracts," says that "the essence of quackery is secrecy." If this be true, isn't it found more or less in so-called regular practice? Now, what has induced the people to try new methods? *The old method is unsatisfactory.* What has led to so-called quackery? The *failures* of so-called regular practice. What, then is the remedy for quackery? The discovery and practice of right methods, *not* medical legislation.

The old practice was largely to sweat, purge, bleed and salivate. The logical method is to find and remove the cause. The usual remedies now given in the treatment of disease are poisons, given to kill something, they know not exactly what. The common practice of the "reputable" schools recognizes the *body* only; the new *health* practice recognizes the soul as the motor of the body. The old system, or so-called "scientific" method, keeps the people in ignorance; the new system invites them to drink at the fountains of perennial youth, *living* knowledge.

State medicine, in the present state of sanitary science, is very much like state religion—a matter of uncertainty and doubt, and very likely to culminate in despotism. The true province of the state is first to discover what science and justice is, and by wise measures to lead the people, so far as possible, to adopt the same for the universal good. All laws necessary for the health and happiness of man are

already a part of the constitution of the universe. Legislators sometimes think it useless to re-enact the laws of God, but it is worse than useless to enact any other. Whatever conflicts with science, truth and justice, as they lie in the Divine Mind, or are made known through nature, is sure, sooner or later, to bring degradation and suffering to society. What we most need is science (not that which is often falsely called science), truth and justice. Now, it is evident to any thinking mind that any legislation on matters of health which upholds or in any way gives support, even moral support, to error, is not state medicine in any just and true sense, but is rather downright state quackery. And to enforce quackery by legal enactment is such a perversion of government that we find in the English vocabulary no name for it.

An *advisory* board of health to investigate the causes of disease, and diffuse among the people a knowledge of the means of preventing sickness, may undoubtedly be made useful to the public. But the moment any board of health adopts an error and seeks to promulgate it, that moment such board becomes a positive evil in proportion to its influence. State quackery is as much worse than individual quackery as the State is greater than the individual. State quackery fastens an error upon the people for centuries, or at least for long periods of time. It is general and dominating. Many people suppose human law to be infallible and sacred; and so it is when it coincides with the divine law, but not otherwise. Human enactments and human courts are fallible, like all human beings. The law is an expression of the will of those who concern themselves in politics; and no reformer, as a general thing, can secure legislative aid, unless he buys it, till he first secures a majority of the people on his side of the question. This means that the

law is only the expression of the average public opinion, or something less. "The glorious uncertainty of the law" is as familiar to the public as that other expression often quoted, "The majesty of the law." One pertains to human enactments; the other, properly, to the Divine. There is no uncertainty in nature's laws, and there is no majesty in State quackery.

We all know the nature of strychnine. It is a deadly poison. Now, imagine a law of the state requiring strychnine to be used as a stimulant and tonic to all nerve centers in all cases of nervous depression. Such a law would seem very absurd. But a law requiring strychnine to be used as a tonic and stimulant would be every way just as rational and tolerable as any law that in a general way upholds or favors in any manner the present prevailing practice of medicine, known as the regular practice. In fact, this is the very doctrine of the old school of medicine—to give strychnine as a tonic and stimulant. To favor the old school of medicine is to indorse their errors. The state cannot indorse *any* school of medicine with clean hands. Why? Because of errors in all schools. To indorse or practice error is quackery. But there is one thing the State can do and ought to do, and that is to grant the greatest possible freedom to *all* schools, and in every reasonable way encourage full and free investigation.

If the State can ascertain and declare the causes of disease and the best means of recovery, the people will readily make use of such knowledge, because they love life. The delights of health, and distress of sickness are the only inducements necessary to health, provided the *way* is made known. This is the function of the State, to point out the way, so far as it can be ascertained, to health and long life. It is not the

function of the State to show any special favor to any particular school or method of practice until it can be plainly shown to the satisfaction of all candid persons that such school or practice is absolutely scientific and reliable; nor is it the function of the State to refuse to any new or independent school of medicine the rights and privileges which it has granted to other schools. It must either take away from schools already established, all special rights and privileges, or grant the same to any and every honest applicant. Any other course defeats the ends of justice and perverts the functions of the State. A just government is the only government that will be tolerated by an intelligent people.

Boards of health as now constituted generally indorse and advocate the germ theory as the cause of disease; vaccination and inoculation as a mode of prevention and cure; strychnine as a remedy in heart failure and nervous prostration; laparotomy (abdominal section) in peritonitis (inflammation of the bowels) and for purposes of inspection, and many other errors, and, not satisfied with *advisory* power, ask legal sanction to enforce erroneous, injurious and oftentimes fatal practices. No, gentlemen, *no police power to enforce error.* Tell us all you know, and be satisfied with that. And as for the State, it must be fair and impartial. In the present state of medicine, any State practice is State quackery. Public investigation and freedom, with equal privileges to all honest investigators and all schools, will bring the best results. It will not do to crystallize error into law. What we most need is freedom, public discussions and private study. If any one would have time to live, he must take time to find the means and conditions of living.

The Germ Theory.

The theory that germs, or microbes are the cause of disease has set the whole medical world to studying the natural history of microscopic life. The advocates of this theory are evidently striving to turn the attention of the people from *error*, which is the real cause of all disease, and which everybody ought to perceive, even without eyes, to microscopic creatures that no one can see without the microscope, nor study without costly laboratories. The Germ Theory is a device that serves to keep the people in ignorance of what really does cause disease; is a scapegoat to carry their sins out of sight; is an excuse for taking deadly drugs; and makes the task of avoiding disease, which is really easier than enduring disease, apparently hopeless. The theory, as an explanation of the cause of disease, is false, and is productive of vast evil. Germs of disease (disease-producing germs) of every description are a nuisance in every way, and ought to be banished from good society. They are never the primal cause of disease. They may aggravate conditions already existing, but have no power to set up disease anew. They are scavengers come to remove and destroy waste matter that nature and well-taught people cannot tolerate. Disease-producing (pathogenetic) germs are a disgrace to the medical profession; showing plainly that they have abandoned their sacred office of *teaching* and left the sheep to be devoured by the wolves. Healthful living is the remedy, and to that we must turn our attention.

Pasteurism.

At the outset of his career Pasteur was an ardent opponent of the theory, or fact, of spontaneous generation; maintaining that all living organisms proceed from a parent of

the same kind. As this is a fundamental question in biology we trust the reader will endeavor to scan closely our argument. And at the start let it be understood that we claim spontaneous generation only for the *lowest form* of animals and plants, and freely admit that all *higher* forms of animal and vegetable life beget their kind. The contest, then is narrowed down to the very lowest form of animal or vegetable life. Did the first, or lowest, form of organic life proceed from a parent of the same kind; or, to put it in another form, does every organic cell descend from some pre-existing cell? Pasteur and many medical authors of the present day, ignoring logic as to the *first* organic cell, answer this question in the affirmative. They rest their conclusion chiefly, if not entirely, upon experiments which have been tried in thousands of instances to see if organic forms of any kind could be produced directly from inorganic or *dead matter,* which belongs, as they say, only to the mineral kingdom. In order to make the experiment satisfactory they have of necessity to exclude all seeds, eggs, spores or external forms of organic life, and experiment only with what they call dead matter; and in order to exclude these external forms of organic life they must of necessity exclude also the *vital* air, otherwise seeds or spores might be introduced, as they are generally abundant in the atmosphere. Now, in excluding the air, they exclude the oxygen, which is one of the elements of the atmosphere, and which they admit is *necessary to all germination.* Thus, by excluding the air and oxygen, without which no germination can take place, they destroy one of the essential conditions of germination or growth, and thus render all such experiments nugatory. Their denial of spontaneous generation rests, therefore, upon entirely negative evidence. They have no proof. Now, we affirm with Huxley, Bastian and other distinguished

writers and philosophers of both ancient and modern times, that spontaneous generation is a fact; and we base our conclusion upon logic which is conclusive. Anything is spontaneous that occurs without any visible or external cause (see Dunglison's or Worcester's Dictionary), or, as commonly stated, that did not proceed from some parent form of the same kind. Now, it is evident that the *first* organic form did not proceed from a parent form of the same *kind;* for, being the first of its kind, it could not be a *second,* or *any* other descendant of a previously existing form of the same kind. The *first* necessarily excludes a *prior* form; and therefore the first organic cell did not proceed from a pre-existing cell; it was produced *de novo,* without any visible or external cause, and was therefore a case of spontaneous generation.

The first *organic* cell, or form, must have been produced out of *inorganic* matter or created anew out of one or more *invisible* elements; and, in either case, it was spontaneous generation. If there never *was* a *first* organic form, then we are forced to the conclusion that the lowest organic form is eternal, which is contrary to all human experience with forms of matter. They are all perishable. Therefore, by force of logic, without experiment of any kind, we prove positively the fact of spontaneous generation.

The mistake made by Pasteur and others who deny spontaneous generation is first of all in assuming that inorganic matter is dead, while organic matter is alive. There is no scientific basis for any such distinction. Matter is either alive, or it is not. The process of crystallization and the law of polarity and magnetism of minerals gives ample evidence of some force or energy that operates in all the kingdoms of nature alike; and we may with equal propriety speak of

mineral life as of vegetable or animal life. Whether matter, as such, is alive or dead depends entirely upon our definition of matter. If inertia is a property of matter, as we have been taught in natural philosophy, and matter has no power to move or to stop moving, then it is practically dead, not only in the mineral, but also in the vegetable and animal as well. It is, as we conceive the unseen vital force, or spirit, that moves and energizes all forms of matter, inorganic and organic alike.

The best modern thinkers accept evolution as the natural mode of development, but evolution does not explain the fact of creation, but only the *mode or manner* of creation.

Now, if Darwin is right as regards evolution, then there is and of necessity must be, a law of variation by which at certain stages of development a new species is created, or unfolded, which takes a new name, and the ascent from the inorganic or mineral to the organic realm is perhaps no greater than the ascent from the vegetable to the animal, or from one species of plant or animal life to another. The production of new varieties of the potato from planting the seed of the potato-ball is an example of this law of variation. The production of each new variety is really a new creation (or spontaneous generation) as well as an unfoldment.

Those who deny spontaneous generation first *assume* that the mineral kingdom *is dead,* and then argue that *because* it is dead no life can therefore come from it or be developed from it. But there is life everywhere, and manifest in some degree, and the term death has not therefore, an absolute, but only a relative signification. A thing dies, in common parlance, when the matter which composes its material form is allowed to decay or drop to lower planes of being; or when it ceases to affect the outer sense or senses.

Let us now turn our attention to another idea of the great bacteriologist. He practiced inoculation for hydrophobia and that was and is the principal work done at the Pasteur Institutes. Now hydrophobia signifies "fear of water," and we have no doubt that fear is generally the basis or cause of the malady; and even Pasteur is reported as saying that the virus (poison) of this dreadful affection was found in the *nervous* system and saliva, but *not* in the blood or other parts of the body. Now if this language means anything it means that the disease is really mental—a neurosis, based perhaps wholly on fear, and not anything that is actually transferred from the rabid animal; for how could any material virus reach the nervous system *except* through the blood?

Prior to Pasteur's theory and practice of inoculation, hydrophobia was a very rare disease, so rare, indeed, that some physicians doubt its existence, and probably not one physician in a hundred has ever seen a case; but no sooner did the new theory of prevention become known than hundreds of frightened people rushed to Paris to be protected from the bite of rabid animals by receiving into their bodies, according to Pasteur, in attenuated form, the very thing which they feared. Now mark, there is *no known period* of incubation for hydrophobia. One author (Richardson) says that a person may feel comparatively safe after *a year* has elapsed from the date of the bite. The whole thing is probably the result of hypnotism on the part of medical advisers, a sort of hysteria, or in other words the effect of fright which Pasteur institutes intensify. It is difficult to see how the saliva or bite of an animal, like the dog or cat, when rabid, is more dangerous than that of a rabid man; and it is still more difficult to see how the attenuated virus, which, when in full strength *produces* disease, can by any possible means *prevent* disease of the same or similar nature; but it is not difficult to

see how people kept in ignorance of the true art of healing, can, by promises of immunity from even imaginary disease be made to submit to useless and even dangerous operations. In this way millions of people have been induced to receive, under the name of vaccine, or cow matter, the virus of small-pox under the vain hope of securing immunity; and it did not require any great talent or deep penetration to conceive of applying Jenner's, or more correctly, Jesty's, false theory of inoculation to hydrophobia and other forms of disease.

Let us now consider briefly the great work (if the comparatively useless study of microscopic organisms can in any sense be called great), on which the fame of the distinguished Frenchman mainly rests. Bacteriology, now extensively taught in medical colleges to explain the cause of disease, and make, as is claimed, scientific (?) diagnoses of disease, is a branch of study unknown to the profession twenty years ago, and new dictionaries have to be made to accommodate the ever expanding proportions of this most prolific science (?). It creates an enormous demand for microscopes, ever larger and more costly, to piece out human eyes, and marks the difference between medical schools "in good standing" and those that are not, as determined by State Boards of Health. Now what is this terrible creature, the Bacillus, that has fairly turned the heads of the medical savans, and lengthened at once the curriculum of medical schools and the term of medical study? And what is this new science that is about to stamp out disease? Why the science consists chiefly of names, and so long and hard that nobody will ever learn them; of a display of costly microscopes; of numerous tubes and vessels for cultivating the lowest form of animal and vegetable life, and of staining, watching and studying the natural history of these microscopic beings. And all this for the main purpose of turning

the attention of the people *away* from the study of the nobler animal man, lest he should discover the fact that his own ignorance of the laws of being, and his misplaced confidence in drug doctors is the primal cause of all disease.

And now Pasteur, farewell till we meet in that fairer realm, where error falls from finite minds, more readily away, and truth presents superior attraction for all her votaries. You have led a forlorn hope; for ignorance, which is a *mental state* and not a *visible* entity, can never be discovered with the microscope; nor can poison by attenuation be anything but poison still, so long as it retains its identity. The problem of stamping out disease is the problem of removing, not bacilli, but ignorance in regard to the physical and psychic relations of human life; bacilli and micro-organisms, of whatever name or nature are absolutely powerless over a pure and highly vitalized human body; and it is the invisible soul that governs the body and not microscopic objects of sight and sense. The culture of the soul leads to health, but the culture of bacilli leads to disease; and the inoculation of pathogenetic germs is at best only a dangerous experiment in pathology.

Poisons and Medicines.

Poisons of the most deadly kind are constantly given as medicines. Now we raise the question for both physicians and laymen to answer, is such practice rational? If not rational, 'tis time to discontinue such practice. What is a poison? It is something that cannot be taken into the system without injury. This is a subject of vast importance to millions of people, involving the question of life and death. Let us examine it with candor. In the first place it cannot be denied that a large proportion of so-called medicines are poisons; in fact, the two words are used as nearly or quite synonymous, as medical terms show.

According to the derivation of the words, a pharmacist is one who deals in poisons; and pharmacopœia signifies "poison-making." The word medicine is of better extraction and ought not to be confounded with pharmacy. The line of distinction should be clearly drawn; and if poisons are ever useful we want to know just when and where. To confound medicines and poisons is to confound life and death. Poisons may be useful to destroy animalcules and deaden sensibility, but they ought not to be dignified by the name of medicines. If poisons, let them be known as such. If a grain of strychnine is poisonous then any fraction of a grain is also poisonous; and no strychnine can rationally be given unless we desire a poisonous effect.

Nux vomica, in very small doses, is regarded by the profession as a tonic. (See United States Dispensatory.) We are also told that the effects of strychnine (or strychnia) upon the system are identical in character with those of nux vomica. Now a tonic, according to the profession (see Dunglison), is a medicine which augments the strength of organic actions in a durable manner. Thus we are taught that a deadly poison is a medicine which augments the strength of organic action in a durable manner. Is this science? Far from it. A poison that *destroys* organic action cannot by any possibility augment organic action in a durable manner. Our profession, in this instance, not only confounds medicine and poison, but confounds spasmodic action, which prefigures death, with physiological action, which represents health. A bad mistake and one that annually costs many lives, if logic be any proof.

We need not quote the long list of poisons used as medicines. They are chiefly considered in three classes: corrosive, narcotic and septic. The mineral acids and alkalies are corrosive; hyoscyamus, morphine and stramonium are sam-

ples of narcotics; and vaccine virus, used for vaccination, is septic poison. Are poisons ever medicines in the true sense of the term?

A medicine, according to its derivation, is something that *heals* or *cures*, or at least something that is given for that purpose. If it fails to heal or cure, but kills or injures instead, then does it not fail to be a medicine? Does the ignorance of the practitioner ever change the character of a drug? Will not three grains of arsenic, given as a medicine, kill just as quickly as though given with murderous intent? And if it kills is it not a poison? Now, then, one step farther. If three grains kill, will not one grain *partly* kill? Is the character of the drug changed by increasing or diminishing the quantity? Here, as it seems to us, is a fatal error of the schools. Medical authors talk of *toxic* (poisonous) *doses*, meaning thereby *a large dose* of what they call a *medicine;* and convey the idea that the same drug, which in large doses is poisonous, is not poisonous in small doses. Are they correct? Can it be said with propriety that some drugs are poisonous in their nature and others not, or are drugs poisonous only when given in large doses? The distinction is important. Many a life has been lost, as we believe, by this stupendous error.

One author (see "Therapeutic Sarcognomy," 1891, p. 365), says: "There is no distinct line of separation between food, medicine and poison. The same substance may be at once a food, a medicine *or* a poison, according to the method of its use." "Salt as commonly used is a necessary food; more freely used it becomes a medicine, and in large quantity a poison." Now this author distinctly says what many authors imply, that foods, medicines and poisons are badly mixed. And this is true. Nothing but the *size of the dose* and method of application, according to these authors, seems to determine the character of poisons.

We quote again from "Therapeutic Sarcogomy": . "The highly corrosive poison, muriatic acid, may be used in sufficient dilution as a medicinal food; and, indeed, combined with the corrosive caustic soda, it becomes a necessary food, —common salt." We desire the reader to examine this sentence carefully. The author first tells us that muriatic acid, highly diluted, is a medicinal food. This idea (erroneous, as we hold), comes from the common notion of physiologists that muriatic acid is a constituent of the natural juice of the stomach. That, too, we hold to be erroneous. The muriatic acid found in the stomach, is, as we hold, foreign to the stomach and *not* a natural part of the gastric juice. Salt and water contain all the elements of muriatic acid. But this author makes another mistake. Caustic soda (Sodium Hydrate, or Sodium Hydroxide; chemical formula, NaOH) is not one of the elements of common salt, nor is muriatic acid (HCl) the other. The elements of common salt are Chlorine (Cl) and Sodium (Na), and the formula for salt (Sodium Chloride) is NaCl.

But the main question is, are poisons *properly* called medicines? We know they *are* called so, and the word Pharmacopœia signifies "poison-making," but isn't it time to make a distinction between medicines and poisons? A poison may be properly used, we grant, to destroy animal life, and if that is the office of medicines, then a poison may be a medicine. A poison may be given to *deaden* sensibility (to destroy vitality) and thus remove pain; but the question remains: Is that the best way to remove pain? Is it a proper mode of cure? Would not the removal of the cause of the pain be more scientific?

Worcester defines "poison" as follows, viz: "any substance which, if introduced into the animal economy, disturbs, suspends or destroys some or all of the vital func-

tions; venom; virus." Now *why* should the physician wish to disturb, suspend or destroy some or all of the vital functions? Is that the true process of cure? And if poisons must be used for the purpose of destroying parasites and micro-organisms would it not be better to *call* them poisons? We have often heard it said that "what is one's meat is another's poison." Now meat signifies "that which is eaten," and this old saw simply avers that *some* persons eat *poisons.* It does not aver that poisons are meat. A poison may sometimes be used in practice, as when corrosive sublimate is used as an outward application to kill lice or ringworms. It may be necessary for our comfort as patients, sometimes, to destroy the vital functions of parasites, or fungous vegetations, by the use of poisons, but I would *call* them poisons always and everywhere, and not classify them as medicines whose nature is or should be entirely different.

At least we may insist that *a small quantity* of salt, arsenic or strychnine is as truly of a poisonous nature as any *larger* quantity. An ounce of sugar is sugar just as truly as a pound or any larger quantity. Why not call things by their right names? To patients this matter is important.

Following the instructions and example of Jesus we cannot well forbid any from aiding his brother man when sick, by any and all means in his power; but, we might, perhaps, reasonably require any one prescribing or administering a poison or dangerous remedy to inform his patient or nurse of its true nature. The name of the remedy is now often misleading; and *private* formulæ retard the progress of the race. Let all unite to promote the health and physical perfection of man, irrespective of any narrow-minded selfishness or thought of pecuniary gain. The best interest of all requires the best effort of each; and the best interest of each will be best secured by the greatest good of all.

Medical practice has heretofore been based on theory, hence the great variety of schools and differences of opinion. Whatever *science* touches it unitizes. Cullen has 149 diseases; Vogal, 560, and the Royal College of Physicians in London, 1,146. In the new philosophy, based on science, there is but *one* disease; that is to say, all disease is pain, or distress of mind, owing to some unsatisfactory condition of body. Mark the variety of opinions in the *treatment* of disease. The German Pharmacopœia has about 600 remedies, while the United States has 1,000. The new school has one remedy for all, and that is *knowledge,* or understanding.

Inflammation.

As inflammation of some part of the body, however obscure, is the almost constant attendant of disease, it is important that all understand it.

The word itself signifies "in flame," or "on fire." It probably received its name from the heat, or heat and pain that generally accompany it. To these symptoms of heat and pain are generally added three others, viz.: redness, swelling, and disturbance of function. Certain parts of the body, like cartilage and ligaments, which contain no red blood, do not, when inflamed, manifest redness. For this reason the swelling of the knee is usually called a "white swelling." Other parts like the parenchyma (or substance) of the lungs, although the pleura or covering of the lung is *very* sensitive, have no sensitive nerves, and for this reason give no sensation of pain. Heat and swelling, at least so far as outward manifestations are concerned, are also more or less variable symptoms. The one *in*variable element or factor of inflammation, and one which is rarely mentioned by medical authors, is a stasis (standing) or stagnation of

blood in the part. So long as the blood continues to circulate through the part there is no inflammation, although there may be congestion, which is one of the primary stages often leading to inflammation. Stagnation of blood in the part inflamed soon leads to infiltration of surrounding parts with an exudation of serum (the watery part of the blood) which, with the fulness of the blood vessels produces swelling, and the swelling produces in sensitive parts, pain by compression of the nerves.

It is well to remark that an excess of fibrin in the blood increases the tendency to inflammatory disorders, and again that an excess of fibrin is probably the result of an excess of nitrogenous or albuminous food that furnishes material for fibrin. The average proportion of fibrin in normal blood is only about three-tenths of one per cent. In inflammatory disorders it often rises as high as ten-tenths, or one per cent.

We can undoubtedly reduce the amount of fibrin in the blood by reducing the amount of albuminous food taken. The old way of reducing the fibrin or sizing of the blood was by venesection or blood-letting, but a proper change of diet will more naturally accomplish the same end. Again, blood containing an excess of fibrin, is more likely to *coagulate* in the vessels, and this may be the secret of inflammation which no physiologist seems to understand.

External inflammation is generally readily detected by its visible symptoms of redness and swelling; but we must judge of deep seated and internal inflammation by disturbance of function, pain and soreness.

Whether congestion precedes or follows inflammation, depends upon our definition of inflammation. Congestion signifies "bearing together" or a crowding of the part with blood; and whether the crowding or distension of the blood

vessels takes place chiefly in consequence of some disturbance of the nerves that circulate the blood, or in consequence of stagnation of blood in one or more vessels caused by obstructive coagula or clots, we are not at present able to determine. We can only say that congestion is more frequently relieved without serious trouble than inflammation, so that we incline to the opinion that congestion is dependent rather on the influence of the vaso-motor nerves than upon any actual stagnation of blood that always takes place in inflammation. We know that the blood moves under the control of the nervous power acting upon the vaso-motor nerves, and that any abnormal or defective nervous power will be at once manifested in the circulation. We know that irritation of any part, whether mechanical and external or purely mental will increase the flow of blood to the part, and this is expressed by the Latin sentence, *Ubi irritatio ibi fluxit* (where irritation was there [the current] flowed.) This is demonstrated by rubbing vigorously any part of the body till it is red, or by rousing to action some of the various emotions of the soul.

The cause of inflammation may be dependent upon mental and nervous action, or it may be dependent upon the state of the blood as to the amount of waste matter and excess of fibrin which it may contain, or more likely, it may be dependent upon these two causes combined. The blood, which is well called the river of life, flows in the blood vessels like a current of water in its channel, and we know that if water is considerably thickened by earthy or vegetable matter, it will flow more sluggishly, or cease to flow altogether unless the current is deep and strong. From this we may reasonably infer that when the blood becomes loaded with waste matter, or an excess of fibrin, or becomes too dense by an excess of salt or sugar in the blood, or if the nervous power

is exhausted, or is irregularly distributed, we have conditions that may give rise to inflammation.

We may, then, arrange the symptoms in the progress of inflammatory disorders as follows, viz.:

1. Irritation of some part, mechanical or mental, or abnormal change in the condition or state of the blood as to its density, fluidity, amount of fibrin, of carbonaceous matter, or of waste from the tissues.

2. Congestion of some organ or part.

3. Inflammation.

4. Impairment of function.

5. One or more of the following results of inflammation, viz.: resolution (return to the normal state without serious injury); suppuration (formation of pus or abscess); gangrene (death of the part inflamed); adhesion (uniting of parts naturally separate); effusion (the pouring out of serum into some cavity or tissue of the body), or induration (unnatural hardening of the part).

Inflammation of a joint is technically called *arthritis*. Arthritis of the hip joint is sometimes called *coxalgia* (hip-pain). Inflammation of the knee joint is often called a *white swelling*, from absence of redness; of the synovial membrane around a joint, *synovitis;* of the periosteum (membrane around the bone), periostitis; and if, attending periostitis, there is a discharge of pus from the bone or periosteum, it is called a *fever-sore;* inflammation of a vein is called *phlebitis;* of the meninges (membranes) of the brain, *meningitis;* of the stomach, *gastritis;* of the liver, *hepatitis;* of the kidneys, *nephritis;* of the uterus, *metritis;* of the pharynx (throat) *pharyngitis;* of the larynx, *laryngitis;* of the pleura (membrane around the lung), *pleuritis* or *pleurisy;* of the lung, *pneumonia;* of the tonsil, *tonsilitis;*

of the spinal cord, *myelitis;* and of the iris (colored portion of the eye), *iritis.* It will be seen that the termination *itis,* signifies inflammation. In all these cases the most important thing is not to be able to name the disorder, but to know the cause and the means of removing it. It was once common to bleed in inflammatory disorders, and some still advocate the abstraction of blood. Bleeding was technically called venesection (vein-cutting). It does not seem quite reasonable to use the same means to cure a man or woman that never fails to kill an inferior animal; the only difference between curing and killing being in the amount of blood taken. Notwithstanding this, physicians bled till patients would no longer submit to it. The idea seemed to be to get out the bad blood; but the patient not being able always to distinguish between venous and arterial blood, sometimes accused the physician of taking his *best* blood. At any rate it was such blood as he had, and he couldn't very well get along without blood. The blood is the means of transportation in the animal system, and as to the difference between venous and arterial blood, it is of little account, provided the patient makes use of his lungs. A small fraction of a minute is all that is necessary to *change* venous to arterial blood, and it is for this reason that deep and full respiration is so effectual in reducing all inflammation, and especially inflammation of the lungs (Pneumonia). Venesection was a partial but poor substitute for deep breathing or voluntary respiration, whose importance was not understood. It reduced temporarily, the blood pressure in the vessels, and by abstracting a portion of the blood, removed to some extent, the waste matter in the blood and excess of fibrin; but it did not change what blood was left in the body as breathing *does,* nor did it in any way correct the errors of life that lead to inflammation. What it *did* do, was to reduce the vitality of the patient; for "the

blood is the life," in an important sense. 'Tis better to reduce the excess of fibrin in the blood by dieting, or abstinence if necessary, and to remove the waste matter by means of deep breathing and judicious exercise. This can always be done in reasonable time and with magical and delightful results. Many a pain can be driven away in like manner.

The fibrin of which we speak is an essential element of the blood, and in health it amounts to about one part to five hundred of blood; *i. e.*, one-fifth of one per cent. But in inflammatory disorders there is always an excess of fibrin. The fibrin is *held in solution* in the blood under *normal* conditions, but sometimes, when in excess, forms clots (thrombosis) which plug up (embolism) one or more arteries, and thus cut off the circulation beyond. The fibrin is an albuminous substance that serves under normal conditions to build up the tissues. It becomes solid or semi-solid when the blood clots, and by aid of a microscope may be seen to consist of delicate fibrils ready to be woven into tissue. It is taken out as we conceive, from the circulation *in the capillaries,* and becomes semi-solid in the intercellular spaces (or lymph spaces) among the tissues of the body where the lymphatic vessels have their origin. The solidifying of the fibrin for tissue-building is synonymous with what is commonly called clotting or coagulation of the blood, and the serum, or lymph, that remains in the lymph spaces after the removal of the fibrin from the transuded plasma (liquid portion of the blood) is returned into the circulation by means of the lymphatic vessels, which are subsidiary to the venous circulation. The serum (watery part of the blood) is the plasma deprived of fibrin, and the lymph is the filtered serum. To hold the fibrin in solution in the blood until it is wanted to repair the tissues, is one of the problems for arresting inflammation, and this is best accomplished by the use of lemon

juice and water freely taken as a drink. Lemon juice retards the process of fibrinization. Exercise, provided it can be taken, increases the *demand for fibrin* in the system and is helpful. While any excess of fibrin remains in the blood no albuminous food will be required. Hot applications tend to promote the circulation of the blood, and relax the obstructed vessels.

In the past, in addition to blood-letting, various drugs have been used to act as spurs upon the eliminating or depurating organs (skin, lungs, bowels and kidneys). These drugs were classified as diaphoretics, cathartics, diuretics and expectorants, according to the organ or part that is chiefly active in throwing off or eliminating the drug which was repugnant to the vital force. So long as sufficient vital force remains, emetics are naturally ejected by the stomach, cathartics by the bowels, diuretics by the kidneys, and diaphoretics by the skin. Calomel—a compound of mercury and chlorine—was also given to produce salivation (a copious discharge of saliva). This not only affected the salivary glands, but the bones and teeth, causing them to decay. To the administration of calomel and other preparations of mercury is due, as we believe, many deformities, caries or rotting of the bones, ozœna (a foul odor from the nostrils), and other symptoms usually attributed by medical authors to tertiary syphilis (constitutional syphilis).

One thing is always to be remembered in regard to drugs. They never reach the primal cause of disease, and are therefore a false basis on which to build our hopes of permanent cure and longevity. Cathartics may in proportion as the vital force is disturbed by their presence, result in the temporary removal of feculent matter from the intestine. Emetics may cause the stomach to expel its contents; diaphoretics may result in perspiration, and diuretics in diuresis (abnor-

mal increase of the secretion by the kidneys); but the forced action in the system on account of the presence of drugs is always temporary and always more or less weakening, if not absolutely destructive of vitality. Offending matters in the system may reasonably be removed and as speedily as can be done with safety; but violent and poisonous drugs are always dangerous. A quart or more of warm water may be useful as a detergent of the large bowel; and hand baths properly performed may relieve the skin; but the only safe and sure method of treating cases of inflammation is to remove all causes that obstruct the circulation, correct conditions, aerate the blood by deep breathing, voluntarily and systematically performed, flush the system by drinking freely of water, or lemonade (lemon juice and water), and regulate the diet. The vital force through the eliminating organs will certainly cleanse the blood and system if it has opportunity, and is properly used and supported. The problem is to air (oxidize and decarbonize) the blood, reduce and regulate the diet to the actual requirements of the system, and rouse the vital force by *mental* stimuli to proper exercise. Nothing will so quickly and at the same time safely vitalize the blood and nerves as deep and proper breathing of wholesome air; and nothing will so safely and surely remove pain as to oxidize the blood by active respiration and properly regulate the quality and quantity of food, especially albuminous food, to the actual requirements of the body. Soon as the circulation is free the pain subsides.

Local inflammation can never be cured while the part is continually irritated. Therefore always remove all local irritation. *So-called* cancers on the face have sometimes been permanently cured by simply removing all irritation. Such cancers are properly called "Noli me tangere" (do not touch me). They are caused by irritation only, and heal when it is

withdrawn. Whatever kills the life of the blood or loads it with waste, or excess of fibrin, may lead to some inflammatory disorder. Salt as an article of diet (though it may be useful as a medicine), and salted provisions are known to shrivel the corpuscles of the blood, and to interfere with the process of osmosis (the straining of the fluids of the body through the various membranes) and for these reasons salt and salted provisions may, no doubt, corrupt the blood and lead to abscesses and other inflammatory disorders, especially of the skin. The breathing of coal gas, or of an atmosphere charged with carbon, as from the continuous reinhalation of the same air, or even neglect of deep and full respiration, is a prolific cause of inflammation. But the crowding of the system with an excess of albumen and albuminous food is a special cause of inflammation. We need food, but the food should always wait upon appetite so that we might never have an uncomfortable feeling of fulness. Animal food, eggs, cheese, peas and beans, are all rich in albuminoids, and any excess of them tends to make the blood stagnant by increasing the amount of fibrin. The *safety valve* for any excess of food is time and exercise. All inaction tends to stagnation, and stagnation is inflammation. Proper muscular exercise, deep breathing, fasting, or suitable food and drink will soon remove all inflammatory conditions.

Outward applications and antiseptic remedies may be sometimes useful, as in cases of boils and abscesses; of fungous growths and vegetations, and of the ravages of animalcules, as in scabies. In *zymotic* disease (inflammation accompanied with fermentation of the blood), as in cases of Diphtheria, Scarlatina, Cholera, Typhoid Fever, Small-pox, Erysipelas and Measles, some mild antiseptic (against putrefaction) like camphor water and boric (boracic) acid may be given, as we think, wisely, with the expectation of arrest-

ing fermentation. Sulphide of calcium (sulphurated lime) has a good reputation for arresting the formation of pus in pimples, boils and abscesses. It is given in pills, or granules, in doses of one-tenth of a grain, three times per day for a week. Some give it in grain doses once a day. As an outward application to destroy the vegetations of what is known as ringworm (Herpes circinatus) a weak solution of corrosive sublimate (two grains to an ounce of water) applied twice a day is always effective in a very few days. It is a poison and destroys the growth to which it is applied. The pure tincture of myrrh, or tincture of blood root applied directly to a foul sore or ulcer serves to cleanse it. Warm soda water applied to the skin softens and removes the hardened cuticle and opens the pores. A hot fomentation applied to a superficial abscess or boil serves to relax the parts and may thus promote the escape of the pus or matter confined within. In all cases it is proper to medicate *only* when we know a good reason why we do so. A caustic may be used externally if necessary, to *destroy* organic growths, but it has no power to heal. Inflammation implies either a thickening of the blood, causing it to stagnate, or debility of the vital force, and it may result from either or both causes. The indications then direct us to cleanse the blood of all unnecessary materials, and at the same time reinvigorate the nerve stimulus; and if we would have permanent success, we must not depend on poisons to stimulate the nerve centers, whose ultimate effect, even in infinitesimal doses, is further debility and death; nor upon whips and spurs to the glandular system or eliminating organs, remembering always the law, that action and reaction are equal; but upon so regulating all material ingested, all outward conditions, and the use of all organs, that all excessive accumulations may be duly removed from the blood and body, and the vital force

be made to play more energetically through every part. A brute animal with a broken limb refuses to eat until the blood is reduced by fasting to a condition that favors the union of the fractured bone without pain. *A proper adjustment of the parts, temporary fasting and perfect rest,* are the three essential things for the painless union of broken bones. The fasting need not be practiced beyond the cessation of pain, nor so long even if pain is the result of irritation only. Perfect rest is essential to painless recovery from mechanical injury, but exercise in the *absence* of mechanical injuries will promote purity of blood and rapid recovery. Pain, as a general thing, can always be reduced by fasting, or by reducing the diet below the usual requirements of the system. The diet must be changed, however, *voluntarily,* if at all, and the reason of the change be fully understood. The soul will have its way with the body.

Care of the Teeth.

Nobody, rightly appreciating the value of the teeth, would omit any reasonable effort to save them. And again, the pain which never fails to accompany their decay is, when properly understood, another strong inducement for proper use and care that we may avoid it. The teeth are made of very fine material, quite different from ordinary bone, are hard and durable, and firmly set in the jaws, that they may be used in dividing and comminuting our food, and thus greatly promote its solubility, which must always be accomplished before it can enter the circulation or river of life. It is a low estimate to say that every tooth is worth a thousand dollars; and each person is generally provided with thirty-two "permanent" teeth, beside twenty primary teeth that are secretly and painlessly displaced in childhood when treated with proper care. Artificial teeth can never compensate for

the loss of those divinely made. Then let the child be warned and taught in season to prevent the loss of both use and beauty.

Wild animals that are guided by instinct generally preserve their teeth perfectly. They do not use corroding and poisonous drugs as medicines, baking powders, nor scalding drinks. Great extremes of temperature, acids and alkalies, many drugs much used as medicines, sugar (which in its concentrated form is escharotic, or to some extent caustic), and nearly all of the thousands of tons of confectionery annually used in this country are undoubtedly the chief sources of decay of millions of teeth annually, and the innocent cause of untold suffering from toothache.

The teeth are nice instruments and need cleaning every time they are used, just as much, yes, vastly more, than the knife and fork and other table dishes need cleaning. Without this care, not only will the teeth be injured, but the breath becomes foul and the health impaired.

If we were constantly in the open air, living on plainer and more natural food and engaged in active muscular employment or recreation as most all wild animals are, then perhaps we might not require such religious devotion to the teeth. As it is we must do or suffer and die. To cleanse the teeth with *warm water*, mind now, not hot water or cold water, but water blood warm, invariably after using them, so as to remove all sugar and deleterious substances, is an almost infallible preventive and cure of toothache. Try it; remember it; use it.

Temperaments.

Temperament, from tempus, "time," the great temperer, is the bodily constitution which marks the differences of persons in respect of physical structure, mental endowment, functional activity and disposition of such persons. Recent writers more generally reckon but three temperaments—the *sanguine, nervous* and *lymphatic;* relating to the blood, nerves and lymph. Another classification of temperaments is the motive, vital and mental. The latter corresponds to the nervous.

It is well to remember that there is no sharp line of demarkation between the temperaments, but more or less of an intermixture or blending.

Contagion.

The importance of contagion, at the present time and by the medical profession is greatly exaggerated, while that which is much more important, viz.: *susceptibility to contagion,* is greatly neglected. We put the law of contagion as follows: all disease is contagious directly as its malignancy and inversely as the health and purity of the blood of the person exposed; or, in other words, the more malignant the disease, the more contagious it is, and the person whose vitality is low and whose blood is surcharged with waste and foul matter is on that account more susceptible to disease. The remedy is not quarantine but a health education.

Nature's Kaleidoscope.

All forms of matter are dissolving views like blocks of ice in the infinite ocean of Spirit.

Obsession.

A person is obsessed who is unconsciously governed or controlled by the influence, thought or will of another. The remedy for obsession is the unfolding of the understanding. No one well grounded in the truth can be moved from it by the thought or will of another. Hypnotism is a species of obsession, but no one can be hypnotized against his will.

Convulsions (Eclampsia).

Convulsions are an irregular and involuntary contraction of the muscles by which the body and limbs are distorted, attended by loss of consciousness. They are more commonly called *fits,* but technically, eclampsia. This latter term is from the Greek and signifies to "shine out," flash or explode, on account of the suddenness of the attack which often surprises and alarms the attendants. They are seen in infants as well as grown people, and are commonly divided into epileptic, puerperal and uræmic convulsions. Uræmic convulsions are supposed to depend upon or arise from urea (the principal waste product from the kidneys) in the blood; puerperal eclampsia is confined to parturient women, and epileptic convulsions are the principal feature of epilepsy. They all indicate a functional disturbance of the nerve centers of the sympathetic system, and the subordination of the usual controlling influence of the cerebral hemispheres, or human will; or in other words convulsions are the result of what is called technically "reflex action." The irritating or exciting cause may be an overloaded stomach, worms, worry, fright or other violent emotions which disturb the current of the circulation. Ovarian and uterine irritation may be the exciting cause of convulsions

which may take the form of epilepsy or hysteria. In all cases there is a temporary loss of individual control of the voluntary muscles; a yielding of the will to fear or other emotions or sensations. Lastly, there may be, in rare instances, a tumor, embolism or mechanical injury of the brain. All intemperate habits and venereal excesses must be considered as predisposing causes, and anything that upsets the equilibrium of the motor centers of the nervous system may be the exciting cause.

The presence or absence of unconsciousness (coma) in convulsions depends upon the condition of the blood and circulation in the brain. In hysteria and tetanus there are violent contractions of the muscles, but no loss of consciousness.

There is really no scientific basis for the distinction sometimes made between *tonic* and *clonic* convulsions. They both originate in the same causes and differ chiefly or only in degree of continuance. If the contraction of the muscles remains fixed and continuous for some time, as in tetanus, it is termed "tonic," otherwise "clonic." Generally there are some premonitory symptoms of convulsions, by observing which and correcting the erroneous habits, attacks may be warded off. The most prominent of these symptoms are vertigo or dizziness, floating specks before the eyes, hiccough and cramps in the legs and feet. These symptoms all indicate a thickened, stagnant or impure condition of the blood, which must be corrected by some change of diet, or even abstinence from food for a short time; more perfect action of the bowels; better oxidation of the blood by use of the lungs, and more judicious exercise in the open air.

Autopsies (examinations) of the bodies of persons who have died have shown, it is said, that *puerperal* convulsions

are caused by clots of blood which clog the circulation of the brain, lungs, liver and kidneys. These clots are probably due, in great measure, to an excess of nitrogenous or albuminous food, or to neglect of healthy activity of the muscular system. Another cause that is mentioned by authors is the intestinal load that accompanies constipation and poisonous products of fermentation, which often takes place in the stomach and bowels. We must bear in mind that the prospective mother has to oxidize not only her own blood but the blood of the fœtus also by inhaling more oxygen than usual, and that she must also eliminate from the body of the fœtus all its waste through her own depurating organs. For this reason the kidneys, liver and lungs of the mother, unless kept in good condition, are not always equal to the task. The remedy is a more vigorous life of the mother and a more judicious diet. If convulsions or symptoms of convulsions at any time occur (as determined by uroscopic tests for albumen in the urine) it is necessary to curtail and regulate the diet and thus eliminate from the blood not only all excrementitious matter and poisonous products of fermentation, but also the excess of albumen.

Until this can be accomplished the patient if plethoric or constipated or "bilious," might wisely subsist for a few days on skimmed milk or buttermilk, or the juice of the lemon and water. The bowels must be cleared and Nature left free to do her work. If these suggestions are intelligently carried out there will be no necessity of resorting to the dangerous and unnatural methods now practiced for averting threatened convulsions. Albuminous urine is sometimes made an excuse for abortion when it is merely a symptom of excess of albuminous food. Correct the diet and take judicious exercise.

If through ignorance or perversity puerperal convulsions

take place it is best not to restrain the patient by force, but simply provide against self-injury. A napkin may be placed between the teeth to prevent biting the tongue, and a pillow placed so as to break any blow that the head might receive by coming against the wall of the room or other hard substance.

Sweating by wrapping folded sheets or blankets wrung out of hot water about the patient and covering them with one or two dry blankets is considered beneficial. In giving a hot bath or a hot wet sheet pack care must be taken to keep the head cool and to counteract faintness by the use of hot home-made lemonade slightly sweetened. The indications are to reduce excessive irritability, relax the convulsed muscles, keep the blood fluid, and eliminate fast as possible all waste and noxious substances from the entire system.

Sleep and Insomnia, or Sleeplessness.

Perfect sleep is the entire *suspension of action* of the *finite, human mind.* During sleep all action that takes place in the body is carried on, not by the conscious individual mind, but evidently by the same Power that forms the crystal, makes the trees grow and seeds germinate in the ground. Of the operations of this greater universal Mind man is conscious to some degree only during his waking hours, and then only in proportion as his *limited* mind is cultured and unfolded.

The action of this universal perfect Power is called in human finite language and in Physiology *unconscious* action, simply because it goes on without the consciousness of *man,* and more especially so when he is sleeping; but it may be, after all, that man's consciousness is, so far as it reaches, the consciousness of the Infinite. Sleep is a mys-

tery. Its cause we do not know. In it we lay down the oars with which we make the little voyage of life and become one with the great central Heart of Being. All voluntary action ceases.

"O, gentle sleep, Nature's soft nurse."

"Sleep is Death's younger brother, and so like him, that I never dare trust him without my prayers."

"Blessings on him who invented sleep, the mantle that covers all human thoughts."

Sleep is rest for the brain as repose is rest for the muscles. The heart (which is a muscle), rests during the interval of its contractions, and so of all other muscles; but after severe and protracted exercise the voluntary muscles require *additional* rest. Why the involuntary muscles (for the heart has no additional rest) do not require the same rest as voluntary muscles we cannot say unless it is that their action is uniform and consistent, while the voluntary muscles under man's control are sometimes exercised very *un*reasonably, and again are entirely neglected. Within certain limits man has control of all the organs and parts of the body, but the limit is reached when we pass from the voluntary to the involuntary nerves and muscles. The involuntary nerves produce what we call unconscious action, and among unconscious actions we must classify the phenomena of sleep. It is governed by the involuntary or sympathetic nerves. Now the action of the latter is modified by the various conditions of the body, and so we may indirectly modify to some extent unconscious action (reflex action). During sleep the brain attracts or requires less blood than during waking hours, at least that part of it (the cerebrum) which is the organ chiefly of the human, finite mind. Whether less blood flows to that *part* of the brain during

sleep, which supplies nervous energy to the heart, blood vessels and lungs, all of which are active during sleep, is another question not yet settled. It is the finite, human part only that sleeps.

As to the necessity of sleep, it is generally admitted, and Dr. Hammond in the Health Reformer for March, 1873, relates an incident that seems to prove that protracted insomnia produces death. A Chinese criminal was condemned to die by being deprived of sleep. A police guard kept him awake. He became delirious and died on the nineteenth day.

Again, a gentleman in Vermont (Mr. William Durkee of Stockbridge), states in good faith that a severely distressing bodily illness deprived him entirely of sleep for *two full months* (December and January of 1888-9). He recovered and again slept as usual, but survived only about two years. What the absolute requirements of the body are, under *varying mental states*, may not be fully known. The outward senses are locked in sleep, but the mind is not obliterated. La Fountain made admirable verses in his sleep; mathematicians have solved problems, and Alexander is said to have planned battles. The phenomena of somnambulism (sleep-walking) and dreams prove that there is some mental agency at work back of the human consciousness. To the sleeper time and space are annihilated. He enters the sea of universal being. Nightmare is a species of dreaming; the mind is more or less active and conscious, but the will is absent, so far as relates to any control of the voluntary muscles. The muscles may be controlled, but not consciously. Nightmare is usually referred to late and heavy suppers, or indigestible food that interferes more or less with the action of the heart and lungs. The sleeper is disturbed in nightmare by the sleepless sentinel that controls the sympa-

thetic nerves because of danger to the vital organs, or of great oppression. The time required for sleep varies considerably. Young children sometimes sleep the greater part of the time, and as they grow older require less sleep. One-third of the whole time is about the average necessary for sleep during life. Thomas Parr, who lived to the age of 153 years, slept much of his later life. On the other hand, Jeremy Taylor, Humboldt, and Frederick the Great slept only one-sixth of the time—four hours. Men have slept while marching and on horseback. Sleep is not merely insensibility, but a natural quiescence of the functions of the upper brain. Considerable blood flows to the brain (especially the cerebrum) during sleep, but probably less than when the patient lies in a state of coma, and more than in fainting. For natural sleep, then, we must have a calm and regular flow of the blood. This cannot be secured unless the nerves (or more properly the mind) are also calm and tranquil, and the latter cannot be calm unless the soul (the deeper or more hidden part of the mind) *is satisfied,* and the body with all its organs is free and normal.

A deficient or an excessive quantity of blood in the brain may produce insensibility, but not necessarily calm sleep. Insensibility may be produced by drugs, but calm sleep is strictly a mental process, at least in its origin.

Strong tea and coffee and *small* doses of opium or belladonna generally induce wakefulness; while opium in larger doses which overpower the brain, produces stupor; hence opium in small doses may be considered a nerve excitant, but in larger quantity narcotic. It first excites, then oppresses the intercranial circulation. Coldness of the feet, or a dry, burning sensation of the soles is a source of wakefulness. Sponging of the feet with vinegar and water will

relieve the burning. All strong mental emotions, whether of joy or sorrow, are unfavorable to repose. *Want* of food and indigestion both sometimes prevent sleep. If there is any degree of honest hunger it is better to take some simple nourishment before retiring. If we do not exceed the healthy limit in taking food during the twenty-four hours of each day, it matters less at what particular time we take it. A bowl of bread and milk, or a saucer of oatmeal and cream, if *needed,* is vastly better to promote sleep than any drug or opiate.

White onions eaten raw have been extolled as a remedy for insomnia, but they are most too strong for weak stomachs.

Stimulants generally disagree with the healthy action of the brain, and should be used only in times of *great depression* or exhaustion to bring the action nearer the normal. The best bed is a nice mattress; the poorest, a feather bed. The latter is objectionable on account of the heat and animal odor. *Proper ventilation* is essential for sleep and for health; and *voluntary deep breathing* to air the blood will help to clear the brain and equalize the circulation. Sufficient *out-door exercise* of the muscles, carried even to a sense of fatigue, is almost sure to promote reasonable sleep. Horace, the Latin poet, gives as a recipe against insomnia—"to swim three times across the Tiber." The unlettered sons of toil are rarely troubled with insomnia. *For great exhaustion,* which prevents sleep, a *glass of whisky* is preferable to any narcotic or opiate. The latter is only useful to temporarily break a bad habit of wakefulness, and even then is of doubtful utility. Do not depend upon drugs. Chloral, in five to ten grain doses, and sulphonal are often given in regular practice as hypnotics, but it is better to avoid them. Ten grains of chloral is sometimes fatal.

Make all conditions of mind and body the best possible, and having done so, sleep when sleep comes to you. Having done the best you know have no anxiety about the result. You will sleep in due time. Do not tamper with drugs nor by any means with the hyperdermic syringe. It is worse by far than the cup. If unduly wakeful some cause is disturbing either the soul or body, and the most sensible thing to do is to seek out and remove the disturbing cause.

Rules in Brief.

To induce sleep *get duly fatigued* in body by vigorous and protracted exercise; if hungry *eat* some plain, wholesome food; have, if possible, fresh and pure air in your room; if thirsty take one or more glasses of hot lemonade; and lastly use bed clothing that is light and comfortable.

Address on Vaccination.

(Delivered by request before the Legislative Committee on Education, in the Senate Chamber, Providence, R. I., March 1, 1893, by the Author.)

It is fitting that a State which was founded by Roger Williams, and has abolished capital punishment, should be among the first to discard another barbarous law. It was here that refugees from other parts of New England came to find shelter from intolerance and persecution. To-day the same cruel hand is upon us, raised this time not by religious fanaticism, but by medical arrogance and bigotry.

Gentlemen, you will believe me when I say that no profession, however honorable, has any right to impose any unsettled opinion or any unscientific practice upon the humblest citizen; and I shall go farther, and say that the State itself has no right, natural or otherwise, to enforce upon the body of any upright citizen, or upon the child of any citizen

whatever any medical practice or any surgical operation that cannot be shown to rest upon a scientific basis. Medical dictation is usurpation; and the enforcement of any unjust law that rests alone or chiefly on medical dictation is medical tyranny; and you know what has been well said, that resistance to tyrants is obedience to God.

The question of vaccination is technically a medical question, but by various acts of Parliament and State Legislatures it has become also a political question; and again, since it is the sacred duty of parents to protect the purity of every drop of blood that courses in the veins of their children, it is, to that extent, a religious question. As a religious and State question it belongs of right to every citizen.

Whether the enforcement of vaccination is not a direct violation of the well-recognized right of self-defense is worth considering. Vaccination is sometimes homicide.

Imagine, for a moment, a peaceable citizen, for this law makes no discrimination between the upright citizen and the criminal; imagine, if you can, the father of a beautiful child arrested by the vaccinator, lancet in hand, who insists on opening the veins of his child for the introduction of some foul disease. Would you punish the father for resistance? Would you condemn the child that has done no wrong to grow up in ignorance on account of difference of opinion? Yet such is the law which we now ask you to repeal. The father might reasonably interrogate the vaccinator: What is the nature of the disease which you are propagating by law?

It is known, says the vaccinator, as kinepox. What is its origin? That is uncertain. Edward Jenner, who received £30,000 from Parliament for claiming to discover the secret of preventing smallpox, tells us in his "Inquiry into the

Nature of Variolæ—Vaccinæ," meaning the smallpox of the cow, that this kinepox originated in the heels of a sick horse; others think it is spontaneous in the cow, but there is nothing very certain about it. It may be the same as smallpox itself. Jenner himself thought so. At least he thought that kinepox and smallpox both had their origin in what is known as the grease, farcy, or glanders of the horse. Jenner also used the pox of the swine as a preventive.

But, says the father, you have told us what Jenner *said and thought,* what are the facts?

Well, the facts are that we do not know exactly what the origin of the vaccine matter is. Ceely, of Alesbury, and Dr. Babcock of Brighton, England, obtained vaccine matter by inoculating or communicating smallpox to the cow. So did Thiele of Russia, and others in Boston and Attleborough, Mass. It is admitted that the Attleborough matter led to an epidemic of smallpox. The Passy cow of 1836 and the Beaugency cow 30 years later are said to have given us some of the best kinds of pox for vaccination. Then again arm to arm vaccination was long a common practice; but of late years that practice is not popular on account of fear of syphilis. In 1857 the profession finally adopted the *smallpox of the cow* as the true vaccine lymph. Dr. Babcock repeated the experiment of inoculating the cow for smallpox about six hundred times, but succeeded in infecting the animals in only thirty-seven cases. The cows in general were not susceptible to the disease. In 1802 a number of cows were inoculated for smallpox at the Veterinary College at Berlin. In 1801 Gassner, of Gunsburg, inoculated eleven cows. In 1849 Dr. Adams, of Waltham, Mass., and in 1852 Drs. Bibber and Knight, of Baltimore, performed similar experiments, and the vaccine smallpox matter thus obtained was handed down from arm to arm. It is small-

pox itself—tens of thousands of persons were vaccinated with Dr. Babcock's bovine small-pox. So really we cannot answer you definitely as to the origin of cow-pox or any other kind of vaccine matter. The profession, after ninety-five years of experimenting on animals and man, are still in doubt. The present vaccine matter is probably more or less a mixture of the following varieties, *viz.*: the original cow-pox of Jenner, supposed to be horsegrease; the equine-pox; swine pox; chicken-pox; goat-pox; spontaneous cow-pox which Jenner said gave no protection and was what he called the *spurious kind;* the small-pox of the cow, and possibly other infectious matter.

And you propose to inoculate my child for some disease which you cannot define?

The law requires it.

Well, what if I refuse your kinepock matter till you can define it and tell me truly whether it is smallpox, cowpox or syphilis?

Then the State refuses to educate your child and it must grow up in ignorance or be educated at your own expense. The State educates those only that have the mark or certificate of this professional disease, the mark of the beast.

And this is Rhode Island?

As you well know.

Now, what has the State to say to the honest inquirer—that it depends entirely on the medical profession? This can be its only plea. But is the State prepared to accept the dictum of the profession without any scientific basis? That would be to surrender the legislative power to a professional class, or Trade's Union. We must as citizens investigate for ourselves. Medicine is certainly not an exact science, and for the State to adopt a medical error is nothing less or

more than State quackery; and State quackery is as much worse than individual as the State is greater than the individual.

The State has provided, as is supposed, a preventive of small-pox; but, gentlemen, it is not a preventive. We have proofs by the hundred thousand that this vaccination procedure is not a preventive. Had it been a preventive, as your law supposes it to be, no one would ever have heard of varioloid. Varioloid is a term invented by the profession to conceal the failures of vaccination. Please note the meaning of the word, "small-pox-like." Varioloid, *according to the profession* is not small-pox, but it is *"like small-pox."* How much like it? Why it *would* be veritable small-pox but for vaccination. According to this law and the hypothesis on which it rests no person can legally have small-pox after vaccination because vaccination prevents small-pox; but he can have, by permission of the profession, varioloid. That, in plain terms, is small-pox that occurs *after vaccination.*

The following definition of "varioloid" I take from a standard work, Dunglison's Medical Dictionary: "Varioloid, from variola, small-pox, and *eidos,* form—resembling small-pox. This is really, small-pox, modified by previous inoculation or vaccination; and hence it has been properly called *modified small-pox.* That it *is* small-pox is proved by the fact, that matter, taken from a varioloid pustule, will communicate small-pox to one who has never had it naturally, or by inoculation, or who has never been vaccinated."

Yes, it is small-pox, but *modified,* says Dunglison. How *much* modified? Nobody knows. Nobody can tell. In order to know the precise difference between varioloid and small-pox we must see the case *before* vaccination, and then

the same case again, *after* vaccination; and then by contrast we can tell the difference. But no mortal was ever allowed to look upon the same case of small-pox both before and after vaccination. It cannot be. And what any case of small-pox may be before vaccination, or after, no human being can ever tell beforehand. No two cases are ever exactly alike. Every case varies according to conditions. Modified small-pox is not sufficiently modified, it seems, to prevent another who is exposed to it from taking the real small-pox. It is modified according to the profession in the person vaccinated, but communicates to another genuine small-pox. Indeed, Dunglison tells us in his dictionary (See *Vaccina,* page 892 of edition of 1856; p. 953 of edition of 1860; and p. 1086 of 1874), that "*small-pox occurs,* at times, *as an epidemic after vaccination.*"

We may then set it down as a fact, proved by the best medical authority, that small-pox and varioloid are really one and the same thing; and that vaccination is in no sense a preventive of either. That is to say, varioloid is a modification without a difference. Varioloid is then only a name for small pox that occurs without permission from the profession, and without due legislative sanction.

Varioloid is a milestone in the history of vaccination that proves unmistakably, the attempt of the profession to save the boasted discovery of Jenner from ignoble and total defeat.

The *mitigation* theory is another milestone; a *confession* by the profession itself *that vaccination does not protect.* If vaccination really prevented small-pox, then no person could possibly ever have small-pox *milder* on account of vaccination; for no person could ever have it at all *after vaccination.* But still the people are led like sheep to the slaughter, and legislatures have consented to the sacrifice.

Jenner says, "I found that some of those who seemed to have undergone the cow-pox afterward took small-pox, and medical men agreed that cow-pox (vaccina) was not to be relied upon."

This led Jenner to form a distinction between the true and the *spurious* cow-pox. But "there were not wanting instances," he says, "to prove that *the true cow-pox did not always protect* from small-pox." He then "discovered that the virus of cow-pox was liable to undergo progressive changes, so that in a single day it might become *non-protective.*" Thus one subterfuge after another was resorted to by Jenner and the profession to explain away failures.

Facts unfavorable to the object were often suppressed and are to this day. "I hope," says Baron in his life of Jenner, p. 274, "it will not be thought out of place if I express an ardent wish that my professional brethren may be slow to publish fatal, or other cases of small-pox after vaccination until they have good grounds for believing that their patients had regularly and duly passed through the *protecting* process." Now, gentlemen, will you be kind enough to tell me how any person who had "regularly and duly passed through the *protecting* process," if that was possible, could ever have small-pox afterwards? The fact of having the disease would itself be proof that the person had *not* passed through the protecting process. And so the eulogist of Jenner advised his professional brethren to *suppress facts* about the failures of vaccination in all cases, and they have not been slow to take the hint. And Jenner, himself pursued the same course. He says in a letter to Boddington, in 1801 (see Baron's Life of Jenner, p. 445), "How a gentleman, following a profession the guardian angel of which is fame, should have so committed himself as to have called this a case of small-pox after cow-pox is not

only astonishing to me, but must be so to all who know anything of the animal economy." These quotations I introduce to show the uniform policy of the profession.

Dr. Ingenhousz, physician to the emperor at Vienna, became more and more convinced, says Baron (p. 295), of what he deemed the errors of Jenner. In a letter to Dr. Gardner, Jenner says, "I know not what to do with him." "We must set off by impressing the idea that there will be no end to cavil and controversy until it be defined with precision what is and what is not cow-pox. The true has many imitations by the false on the cow's udder and nipples, and all is called cow-pox."

Finally "Jenner admitted," so says Baron, "that small-pox might succeed perfect vaccination, but could account for the *great number of failures that occurred* only by supposing that *some* circumstances interrupted the proper influence of vaccination on the system." And so by the best authority—the author of vaccination himself and his biographer—the efficacy of vaccination is finally made to rest on a baseless supposition, where, in fact, it always did rest.

We are aware that Crookshank and some other authors do not agree with Jenner and Baron as to the identity of cow-pox and small-pox, but these later authors make cow-pox analogous to something even worse, viz.: syphilis (see vol. 1, p. 464, of Crookshank). Cow-pox is larger than small-pox, according to Crookshank.

Jenner claimed in Parliament, or before the committee, that cow- pox was not catching like small-pox; neither is syphilis. In this respect cow-pox is undoubtedly more like syphilis, which is probably the mother of the whole pox family; for they all originate in filth.

Microscopic examinations of varioloid and vaccine lymph

show that both contain the elements of common pus, and their origin is the same according to the observations of Cohnheim (Entzuendung, pp. 66 and 67, Embol Proc., p. 102). If this be true, then vaccination produces that much dreaded disease, pyæmia.

Dr. Martin, of Boston, in the *North American Review* for April, 1882, considers vaccination exactly equivalent to an attack of small-pox. He claims that small-pox after vaccination is as rare as *second* attacks of small-pox. He says further that small-pox after perfect primary vaccination, followed by effective revaccination, after the tenth year, with true animal virus (which he supplied) will prove as rare as *third attacks* of small-pox. In other words every vaccination is equivalent to an attack of small-pox.

In this same article, Dr. Martin tells us that the Boston epidemic of 1872 and 1873 was the most malignant and destructive in living memory; more malignant and contagious, he says, than in 1721, which was the year preceding the introduction of inoculation by Mrs. Montague and Maitland; and what was true of Boston, says he, was true of every city and large town in Europe and America during the dread visitation.

In the Boston epidemic, 3187 were attacked, and 1045 died; the same number, I believe, that fell at the battle of Bunker Hill. And this occurred, we must remember, after eighteen years of compulsory vaccination. We sowed the seed of disease by vaccination and reaped a bountiful harvest of death. And such a result, if well informed, we might always expect.

But we may be led to suppose that these victims of the great epidemic of '72 were those who neglected vaccination. On the contrary, nearly all had been vaccinated. It is esti-

mated that about 90 per cent. of all cases were vaccinated. Over 1,400 *vaccinated persons died of small-pox* in Montreal from April, 1885, to January, 1886, a period of nine months. In England every man in the army and navy is vaccinated on entering the service, and yet during seventeen years, following compulsory vaccination, there were in the army and navy 1,992 cases of small-pox, and of these, and all vaccinated, 136 died. In England and Wales during the first ten years following compulsory vaccination, over 33,000 died of small-pox, and during the second decade the number exceeded 70,000.

Do we need more proof of the futility and folly of vaccination; it is abundant wherever it has been tried. We will not pain you with the recital.

No wonder poor Jenner lamented—(see second volume of Baron, page 411). "The small-pox will never be subdued so long as men can be hired to spread the contagion by inoculation."

We object to vaccination, because it induces many forms of disease and retards the progress of the race toward physical perfection. In regard to this there is much evidence in Baron's work. I quote as follows: "At this time (1818) there were numerous, and, I believe well founded, complaints of the bad quality of the vaccine lymph itself. Dr. Jenner received hints of this kind from Italy, America and many parts of England." "It seems that a greater number of children now die of measles than formerly." "There is much reason to believe that small-pox left those whom it attacked —(bear in mind the identity of this with cow-pox)—much more susceptible of illness. Scrofula, for example, in all its forms, was certainly very often excited, and in particular, pulmonary consumption."

"What dreadful strides—(another lament from poor Jenner, whose last days were rendered very unhappy by the sad evidence of his own work)—pulmonary consumption seems to be making over every part of our island"—(England).

"I have lately—(Jenner again)—been deprived of the aid of my secretary. He was cut off by that dreadful disease—(consumption)—which I fear will shortly take from me my son."

Dr. Copeland, in his dictionary of practical medicine, says that "vaccination favors the several forms of scrofula." Dr. Perrin, a French physician, says, "the influence of vaccination on mortality has been proved in France." Baron Michel shows in his report of the 25,000 soldiers in Paris, that the "mortality is doubled since vaccination, and that fevers have increased six-fold."

The probability of the intimate connection between vaccination and consumption is developed at length in the medical works of Dr. Nittinger, of Stuttgart, and in Dr. Pearce's essay.

"In 1817, a medical journal in London, wrote, however painful, yet it is a duty to the public and the profession, to apprise them that the number of all ranks suffering under small-pox, who have previously undergone vaccination by the most skillful practitioners, is at present surprisingly great" (see "Jenner and Vaccination," by Creighton, p. 336).

Very many errors cluster around this question of vaccination. The opinion that Boerhaave promulgated at the beginning of the last century, that contagion is essential to the production of small-pox is still largely believed, so prone are people to follow a great man even in his errors. This man was no doubt justly celebrated as one of the greatest phy-

sicians of the eighteenth century; but his opinion regarding the origin of small-pox is very easily disproved by logic. Let us see. No person could possibly have small-pox prior to the *first case;* therefore no person could possibly communicate it in the *first instance.* The first case was manifestly *not* a case of contagion, but was, of necessity, developed. And if disease is developed in one case it may be, and as the laws of nature are constant and uniform, it will be developed always and everywhere under the same or similar conditions. This, then, we may lay down as an axiom, as certain as mathematics, that small-pox is developed by unwholesome conditions.

The law of contagion stated in mathematical form is this: All disease is contagious directly in the ratio of its malignancy, and inversely in the ratio of the purity of the blood of the person exposed.

Small-pox is a zymotic disease. It originated in decomposition and is powerless against cleanliness *within* and without. Zymosis implies fermentation, and fermentation is one of the earlier stages of decomposition. Dr. Carl Spinzig, in a paper read before the St. Louis medical society, January 15, 1881, states that "the eruptive character of small-pox is the outward manifestation of a process of decomposition of the blood produced by an excess of urea." Urea is the product of waste in the tissues of the body and is usually eliminated by the kidneys. Normal human blood contains about 2 per cent. of urea, while variolous (small-pox) blood has about 8 per cent. Small-pox, scarlatina and measles generally occur in the early winter, when the cutaneous elimination is checked, and an increased burden of eliminating waste is thrown upon the kidneys. Accordingly we find more urea eliminated by the kidneys in winter than in the summer when perspiration is more free. In tropical regions it is ob-

served that small-pox is more generally confined to the higher elevations, where the temperature is lower than on the plains.

The decomposition of urea in the blood when not readily eliminated forms a septic poison which infiltrates the capillary vessels of the skin and causes little abscesses which are denominated small-pox vesicles or variola (small-pox). These decomposing granules of urea may become filled with lower forms of life—the micrococci or bacteria—which are products or concomitants of decomposition. These bacteria and micrococci are found in myriads in cesspools and fluids of decomposing animal substance. They are the constant companions, or scavengers of death. They require for development the presence of albuminoids, verging on putrefactive change, heat, moisture and access to air, or oxygen. They may be taken into the system of a *healthy* person without setting up any septic action, and will be harmlessly expelled; but when they meet a certain amount of albuminous matter on the verge of putrefaction, in the blood, they find the aliment necessary for their growth and development.

Florence Nightingale says: "I have seen with my eyes small-pox growing up in *first specimens,* in close rooms or overcrowded wards, where it could not by any possibility have been caught, but must have begun."

The remedy, then, against small-pox is not vaccination, which actually sets fire to the fuel—the materies morbi—if it be present, but purity of blood and a healthy activity of the eliminating organs. Vaccination can never be made a substitute for wholesome living. The laws of nature forbid it. To sow the seeds of the disease can never be made to promote health and physical perfection. It is unnatural.

We take the following extracts from "Cyclopædia of Prac-

tical Medicine," vol. 4, p. 171, published by Blanchard & Lea, Philadelphia, and edited by Dunglison: "Since the discovery of vaccination, the milder varieties of small-pox *have greatly increased in frequency,* so as at the present time to be familiar to every one engaged in practice. Vaccination may be said to have multiplied prodigiously the number of constitutions that imbibe the small-pox mildly." "In a certain limited number of such cases, even when the proofs of correct vaccination have been most undeniable, the small-pox has been found to run its regular course, unaltered in its symptoms, and *unmodified* in any of its features. We cannot, therefore, be surprised if it has sometimes, when so occurring, proved fatal."

Vaccination induces disease. No one can deny that; and to require a child to receive into its blood any disease whatever, before we will open our halls of learning is a travesty on wise legislation and an insult to heaven.

If the medical profession, whose pecuniary interests now seem to be subserved by the propagation of disease in this wholesale manner, demand a law compelling vaccination, the least that a wise and just legislature can do, as it seems to us, is, first of all to require said profession to actually prove that vaccination rests on a scientific basis; that it has and does prevent, or at least mitigate small-pox; in other words, that it is of some use to the people at large, as well as to physicians in a *business* point of view. But have they presented such proof? Never in a single instance; indeed, such proof is not only wanting, but is absolutely impossible. It is impossible because no one can foretell what any case of small-pox may be. Who can tell just when a boil is to appear or how severe it will be, or any other eruptive form of disease? No one; and if we do not know what any particular

case would be if the patient is left unvaccinated, how can we possibly say that without vaccination the case would have been worse? We have nothing to compare it with; nor can we say, five days before small-pox appears, that it will appear at all; we know enough about the heavenly bodies to calculate an eclipse before it occurs, but we do not know enough about the human body and the laws that govern it to calculate the severity of disease, or even its approach in advance of its primary symptoms. This being so, proof of the asserted benefits of vaccination is simply impossible. Medicine is not a science, and the State cannot legislate to uphold any possible error.

"From the time when patient Job cried out, 'Ye are forgers of lies, Ye are all physicians of no value' (Job, xiii: 4); from the time when Asa, King of Judah (II Chronicles, xvi: 12) for the cure of his disease, sought the physician, and as a consequence slept with his fathers and died; from the time when the woman with the issue of blood (Mark, v: 25), who spent all her living upon physicians, and suffered many things from them, and was nothing bettered, but rather grew worse; to the time when, to relieve General Washington of the croup, they blistered and bled him to death; to the time when Charles Sumner and Louis Agassiz, each under their care and medicines, died while subsequent autopsies disclosed a *normal* condition of their vital organs; to the time when English physicians quarreled among themselves at the bedside of the dying Beaconsfield; to the time when the chosen physicians and surgeons of the United States assembled around the sick-bed of President Garfield to extract from his body the assassin's bullet—BLUNDERED—and behold, he died; have the services of doctors as a profession, or any school of them, been such as to make it just and desirable that their theories, prescriptions and practices should be authori-

tative and final over all other people, or entitle them to be the tribunal of last appeal on medical matters, or to hold any special privileges from the State? Their dogmatisms, their quarrels, their blunders, their jealousies, their cliques, their enmities, their inoculations, their feuds, their vaccinations and vivisections are notorious. Into the pleasant pastures and peaceful arenas of true science they have not yet entered. The idea of making perfect health a crime, and of punishing its possessors as criminals, because they will not permit themselves or their children to be diseased by the infusion into their veins of putrid animal pus, is one which could not have originated anywhere except in the minds of medical quacks."

Take off, then, your powerful State support and leave this mere theory, otherwise all unsupported as it is, to its fate. If the theory is true you will not destroy it, you will only leave the people free to find out what the truth is; and once discovered you may be sure that no legislation will be needed for its adoption. The people love life; they love health, and no law or penalty will be required to secure either when once the way is made plain.

It may therefore be well to inquire more carefully into the history and nature of the disease itself, which vaccination was intended to prevent.

Aaron, of Alexandria, is the first acknowledged writer who treated small-pox by name, and he assigned the same cause for it as for measles and bubonic plague. The latter was probably syphilis.

Elfrida, wife of the earl of Flanders, is probably the first recorded case of small-pox, and as such described. This was nearly 1,000 years ago. She recovered.

Avicenna, an Arabian philosopher, and Rhazes both observe that small-pox may affect the same individual twice,

yet the common opinion now is that no person ever has small-pox but once. This opinion, promulgated, as Baron says, without due inquiry by Dr. Mead, was so blindly followed that when small-pox did occur the second time it was set down as chicken-pox, swine-pox, or given some other name. There is no sort of doubt that any person may have small-pox, or any other disease that does not prove immediately fatal, just as often as he allows his system to fall into the same or similar conditions. All Arabian authors believed in the occurrence of small-pox twice or more, in the same person. And if a person may have small-pox twice, then it follows as a logical sequence that one attack cannot possibly give exemption from another. Now we know that many persons have had small-pox twice and some even more. During the epidemic of 1818, in Scotland, Dr. Thompson saw 556 cases of small-pox. Of these 41 had gone through the small-pox before.

The child of a cousin of mine, says Baron, was vaccinated twice with apparent success, then inoculated for small-pox which *took*, and after all this took the small-pox in a casual way by contagion. Elizabeth Everet, he says, had small-pox, as she supposed, when a child, and was a small-pox nurse for forty years, then took the disease and died. Mrs. Gwinnett, of Cheltenham, England, had the small-pox five times. Hon. Robert Grosvenor died of small-pox ten years after being vaccinated by Jenner and pronounced safe for life.

Now how can we explain these successive attacks? That they take place we know, and for all real phenomena there must always be some explanation; small-pox is generally admitted to be a zymotic disease, and zymosis indicates fermentation. Now we know that we can hasten the fermentation of beer or cider by adding yeast. In making cider vinegar

we sometimes hasten the process of acetic fermentation by adding what is called "mother," but we also know that cider exposed to the air will ferment of itself without these additions. So of disease; the introduction of the germ hastens the process which might, a little later, under certain conditions unfavorable to health, originate spontaneously. Fermentation is a process of decomposition. It is not properly physiological, but pathological action. If, however, conditions are made favorable for health no fermentation will ever take place whether the germ is introduced or not; but, on the other hand, when conditions are not favorable to health, and there remains in the system more or less albuminous matter or waste just on the border of decomposition, then the introduction of the mother germ will hasten fermentation and produce disease, that might or might not sooner or later, occur spontaneously. Upon this theory small-pox will recur as often as the system is allowed to become surcharged with fermenting material.

The introduction of the ferment by vaccination is like applying the torch to ascertain whether the matter is really inflammable. Now on the supposition that the patient was loaded with gunpowder, the danger in applying the torch would be in proportion to the kind and amount of inflammable material.

If there was no undue waste or decaying matter in the system at the time of inoculation, or vaccination, the virus "would not take;" but, on the other hand, if the decomposing material was considerable, the very life of the patient might be endangered.

It would seem to an intelligent physician to be better policy to administer some safe anti-septic, like boric acid, and thus endeavor to arrest the putrefactive tendencies and re-

move the waste with the least possible disturbance, rather than endeavor by vaccination to create as much disturbance as possible.

Jenner tells us that the only difference between inoculation and the *natural small-pox* arises from a different mode of receiving the infectious particles (Crookshank, p. 262). In one case it is more or less local, as in the arm; in the other, general. The same is true of vaccination; it is a form or manifestation of the disease inoculated.

Inoculation is the artificial introduction of infectious matter; used alone, however, the term is generally applied to *small-pox* inoculation.

Vaccination, properly speaking, is the introduction, artificially, of infectious matter which is in some way connected with the cow. On account of this connection with the dumb animals kine-pox is by some supposed to be milder than humanized small-pox. It certainly has some relation to small-pox inoculation, and when we vaccinate with small-pox matter the two become identical.

But inoculation was forbidden by Parliament fifty years ago, because it was believed to spread or propagate small-pox; and Baron says, and quotes Moore's "History of Small-pox" to prove, that in Spain where inoculation was scarcely ever admitted, small-pox has caused less mortality than in any other country in Europe. (See Baron, p. 235, and Moore, p. 287.)

Inoculation was prohibited in Paris, also, by royal authority, on the ground that infection was thereby diffused and multiplied.

Now if inoculation spreads infection, so must vaccination. Whatever the nature or quality of the vaccine matter may be—whether it is variolous, syphilitic, equine, or bovine, as

is to this day uncertain—there is no uncertainty of one thing, and that is the fact that we are spreading disease of some sort by vaccination. But disease is never in the line of progress; disease is not a thing to be sought, inculcated or enforced. It is of the nature of error, evil, wrong. It always comes of ignorance, not of intelligence, and it is a sad comment on State legislation that it enforces any impurity of blood, or brands the human form, made in the image of God, with the mark of disease. It will go down in history as evidence of our degradation.

Ignorant parents have sometimes, it is true, exposed their children to infectious disease, thinking it better that they should suffer in childhood rather than in later years, falsely assuming that they must, of necessity, have all forms of infectious disease. But the intelligent instructor who desires only the good of his race, points out the path of health, and leads ever towards that charming goal which is the admiration of all—physical perfection. Disease is not a thing to be sought under any circumstances, but to be shunned. Disease is the *antithesis* of health, and its approach in any form is not evidence of health and safety, but of danger. It is always and everywhere, under all circumstances—whether caused by individual, social, or legislative error—the same vile hated thing: DISEASE. Call it then no longer vaccination, till we know what vaccination is; call it simply disease. We know it is that; always that, and nothing else. Will you compel disease?

Are we fearful lest the too indulgent Author of our being will not punish us sufficiently for our folly that we must supplement or amend His law? He visits disease only upon those who fall into error. This compulsory vaccination Act visits disease or punishment upon the most perfect child; one

who obeys every law of its being. It is an unrighteous Act, and while it remains in force society suffers in consequence. In it we see the hand, not of beneficence, freedom, health and justice, but of self-interested and self-imposed masters of a too confiding people, struggling ever towards a purer and better life. We see in it the hand of caste. It is a medical monopoly; a trades' union requisition. It is not in the interest of the people. It never was. The people never asked for it; do not want it. If vaccination protects, as some doubtless believe, all who desire can be vaccinated and equally well without compulsion. If it mitigates, all who desire can receive the mitigating influence, whatever it may be, without legislative aid. Why, then, continue this injustice and folly? Who demands it? Not the people, surely. It was at first blindly adopted, and has been blindly followed to the present time, and now to withdraw legislative aid would be, doubtless, something of a blow to professional pride; but it is richly deserved. It would seem to imply that the profession may have been in error in this thing, as they have often been in other matters. Why, at this very time they are trying to supply brains to man from the head of a sheep (I refer to Dr. Paul, of Paris). They are industriously searching with the microscope to-day for the cause of disease. But they will never find it with the microscope. No lens, however powerful, will ever be able to reason. There is a wide gulf between material and immaterial things. No one can cross it. The cause of disease is not a *material* thing and therefore is invisible. It is error; the misconception of truth. Understanding alone can discover and remove the cause of disease; and vaccination does not help the understanding; it blinds it. We cannot inject intelligence with the hypodermic syringe.

The idea that health can be a source of danger to society is so manifestly fallacious that no person of sound judgment can believe it; but, fallacious as it is, it is the only possible reason that can be given in support of compulsory vaccination. Those who advocate vaccination consider every unvaccinated child as a standing menace to society. Look at the false assumption! A healthy, beautiful child, as yet free from the taint of all imperfection, whose breath is pure as the mountain air, whose form is something more beautiful than art has ever fashioned, is such a being dangerous in society? It is false, basely false; it is more, it is blasphemy. And a profession, so degraded as to entertain an idea so monstrously absurd deserves no recognition by an intelligent people. Such a profession left to itself, unsupported by law or endowment, would quickly decline. Hence their clamor for legal support.

At the request of the profession, the State has endowed hospitals and provided public vaccinators. What are these hospitals really for? Ostensibly to cure needy patients. Alas! we fear it is not always so. The members of the profession take pride in thinking that hospitals are established and endowed for *scientific purposes;* in other and plainer language, for experiments upon the sick and vivisection. Vaccination, and even inoculation for syphilis, is still practiced as an experiment, and such men as Koch and Pasteur, who inoculate for rabies and consumption, are supposed by many to stand at the head of the profession. Their experiments, so far as any good was sought, have been failures. They have only turned the attention of the people away from the truth that correct living is the only preventive of disease, and have led them to think that universal and perpetual disease will establish universal health, or in other words, that perpetual night is one unclouded day.

Not one physician in a hundred has ever investigated vaccination; not one in a hundred has ever read or seen Jenner's book. It was never used as a text-book in medical colleges. No philosophy or reasonable explanation of vaccination was ever given. "It was conceived," says Winterburn, "in ignorance of the real nature of disease," and "it is not singular, therefore, to find," says he, "the densest ignorance on this subject among those who ought to know its origin and history."

Why, then, do physicians vaccinate? Because it is the custom, a fetich. It is business, and they know not what else to do. They do not know the cause of small-pox, nor how to treat it on any well-grounded, scientific principles, and they must have something to supply the market. They cannot prevent or cure and for this reason blindly follow where others have blindly led.

Let the attention of the people be once turned in the right direction for preventing sickness, and not only small-pox but most other forms of disease would become almost wholly unknown. What we want is teachers, not vaccinators; education, and that physically, not the refusal to open our public schools to children unvaccinated; freedom, not tyranny; health, not disease.

Jenner with only *four years' experience* declared that vaccination gave *life-long* security. How could he know that? He had not proved it. It was assumption. It is assumption still. There is only one class of persons *ever* exempt from small-pox on account of vaccinaton; it is those who die of vaccination; *they* will not have it again. One reason why more children die of small-pox than grown persons is because the number of children exceeds the number of grown persons. Every grown person was once a child, but every child may not live to be a grown person and many do not.

Again, to be a grown person implies better physiological conditions, better modes of life, and the better the conditions the longer the life. For this reason the aged and the mature who live better than the great whole, more frequently escape zymotic disease. The healthy always escape, while those of corrupt and stagnant blood are the victims, and vaccination tends always to corrupt the blood. We must not look to physicians who are paid for vaccinating, and who profit by the increase of disease, to portray the evils and perils of vaccination.

The slaveholders opposed the abolition of slavery because they thought it hostle to their interest. Nothing but war could reconcile *them* to universal freedom. Man is thus often blinded to his own interest. We must, then, in legislation give the profession not necessarily what they think may be best for their own worldly and selfish interests, but what is best for all, physicians included. Vaccination has no scientific basis, and without that you cannot rightly uphold it, and even if it had you need not even then make it compulsory.

Makuna's inquiry in England led to the fact that 242 physicians out of 384 who reported testified to a knowledge of numerous cases of disease occasioned or intensified by vaccinaton. Of these there were nine cases of pyæmia, nineteen of boils, forty-seven of syphilis, one hundred and fifteen of skin disease, and one hundred and twenty-two of erysipelas.

Dr. Thomas Skinner, of Liverpool, tells us (in 1884) that there are many who *die of vaccination,* and that scrofulous and other forms of disease are rendered active by it.

Dr. Brereton, of Sydney, New South Wales, says: "In my experience I have seen more evil results from vaccination than I ever saw from small-pox."

Prof. Bock, of Leipsic, says: "I have in a forty years' practice seen far more evil than good from vaccination."

Dr. B. F. Cornell said in an address in New York (in 1868): "It is my firm conviction that vaccination has been a curse instead of a blessing."

The deaths in England as the result of vaccination during the last decade, as shown by the official report of the Registrar-General, were an average of over fifty every year; and from septic diseases, or *blood poisoning,* over 700 in one year (1883).

In June, 1888, Dr. Stokes, of Boston, Mass., a young man of promise, died of vaccination. In the winter of 1859 and 1860 Ephrain Wright, of Westford, Mass., died of vaccination as determined by a coroner's jury, of which Ex-Gov. John D. Long was clerk.

Gould's "New Medical Dictionary," a late work—tells us that vaccination may be followed by a rash which is sometimes syphilitic. Mr. Tebb, of England, has received from parents thousands of *written statements* of injury or death from vaccination.

Dr. Hermann, chief of the Imperial Hospital, Vienna, says: "Vaccinated persons, bearing unmistakable marks of the process on their arms, frequently have confluent small-pox."

Dr. Simpson, of Edinboro, says: "Small-pox can *never be exterminated by vaccination.*"

Dr. Brett, of London, says: "After fifty years' experience I arrived at the conclusion that vaccination was not only useless as a preventive, but *dangerous.*"

Alexander Von Humboldt, the great traveler, said: "I have clearly perceived the progressive and dangerous influence of vaccination in England, France and Germany."

Dr. Gregory, for fifty years director of the small-pox house in London, said the "idea of extinguishing small-pox by vaccination is as absurd as chimerical, as irrational as arrogant."

Dr. Epps, twenty-five years director of the Jenner institution, after vaccinating 120,000 persons, declared: "The vaccine virus is neither antidote nor corrigent, nor does it neutralize the small-pox. Nobody has the right to transplant such a mischievous poison compulsorily into the life of a child."

Dr. Collins, after twenty years' vaccine experience in Edinboro and London, says: "I have not the least confidence in vaccination. It often transfers dangerous diseases without offering any protection whatever."

Dr. Stowell, twenty-five years vaccine physician, says: "Vaccination is not only an illusion, but a curse to humanity. I myself know the names of a hundred physicians who think like me."

Dr. Caron, of Paris: "It is long since I have positively refused to vaccinate at any price."

Prof. Kranichfeld, of Berlin, exclaims: "I, too, have vaccinated my chldren at a time when I did not know how injurious it was. To-day I would resist the authorities and the police law."

Dr. Stramm, medical staff officer in the Prussian army, published a pamphlet condemning vaccination.

Whole pages of names could be given of eminent physicians in France, England, Italy, Germany, Sweden and in the United States who have strenuously protested against it.

Said Sir Thomas Chambers in Parliament (in 1878), vaccination can "only be justifiable, not upon medical theo-

ries * * * but upon a truth undeniable, universal in its operations, certain in its results, free from peril, and an absolute preventive." But alas! it rests on medical theories alone.

The body or person of the citizen, so long as he commits no crime belongs to the individual, not to the State, and the State has no more right to prescribe medicine than religion.

The State may remove nuisances and protect the health of citizens by scientific processes, but it has no right to invade the healthy homes of upright citizens and compel corruption of blood which never fails to bring disease. Vaccination cannot be included under police power, even admitting its efficacy, which we do not, for the simple reason that no unvaccinated person can possibly endanger a protected person. We must rest our case on logic and facts, not on medical hypothesis or any mere human authority. If we could have a museum of medical fallacies and their physical results it would be a veritable chamber of horrors.

The profession teach us to dread infection, and urge us to establish quarantines, and at the same time inject into our bodies in a manner by stealth the very virus, as many declare, that we are taught so much to dread. Oh, consistency! Where art thou?

The four great epidemics of the middle ages were the sweating sickness, the black death, the plague and small-pox. Of these small-pox, which was to be stamped out by vaccination, alone remains. The others have given way to increasing intelligence; and Jenner who substituted vaccination for small-pox inoculation tells us that small-pox will never be subdued so long as people can be hired to propagate it by inoculation. Now vaccination with *small-pox matter,* which is often used, is precisely the same as inoculation. Pasteur inoculates for rabies, but does not give us the philosophy of

cure or cause of rabies. It is said by some authors to be caused by the *poison of putrid flesh* which the dog is driven by force of hunger to eat. Would it not be a more sensible practice to feed all dogs on wholesome food? Koch inoculated for pulmonary consumpton by injecting the poison from the decayed lung of a dead body. Would it not be better *to teach man the use of his lungs,* and thus avoid consumption? How long shall we blindly follow a deluded and deluding profession down to degradation and death? But, says one, what shall we substitute for vaccination? Now we regard vaccination as an unmitigated evil. And for evil we would substitute good; health in place of disease.

But how allay fear of small-pox? By proper education. Pure blood is a perfect prophylactic against all forms of zymotic disease.

No physician of the present day unless divinely inspired can foretell the results of any single case of vaccination, but every physician of good sense ought to know that the results are always bad, necessarily so. Measles, typhoid fever, scarlet fever, scrofula, consumption, cancer, erysipelas, small-pox itself, leprosy and syphilis are undoubtedly propagated more or less by vaccination.

"There appears to be very little doubt," says Crookshank (p. 462), "that syphilis may be transmitted by vaccination." The viruses in use, he says, have been derived from several distinct and severe diseases in different animals. Jenner, as a precaution, took the vaccine matter from the vesicle of the arm, just before the commencement of the eruptive fever. At this stage it is less malignant; and yet James Phipps, Jenner's first case of vaccination, died of consumption. Jenner's son, inoculated for swine-pox by Jenner himself, died of consumption in his twenty-first year.

L. H. Ballinger, of Galveston, Texas, a prominent merchant, died from the poisonous effect of vaccination March 30, 1882, and Mr. Redmond, superintendent of the Texas Express Company, was lying at the point of death at the same time from the same cause. In the same month James Kirkwood, a farmer of Little Rock, Arkansas, lost an arm by vaccination. In April, 1882, Edward Newman, a preacher at Jerseyville, N. J., became violently insane from being vaccinated with virus taken from the arm of a man subject to spells of insanity.

Dr. H. Boens, before the Belgian Academy of Medicine, gave the history of several cases of confluent small-pox following animal vaccination, and many cases of poisoning by putrid matter.

Dr. Alexander Ross, of Toronto, Canada, says: "One thing is certain, thousands of children are killed annually by vaccination."

Erysipelas is often only another name for one of the natural results of vaccination.

And now, in summing up this matter allow me to say, that in the arena of ordinary discussion the question of vaccination, like all unsettled questions in politics, is so surrounded with clouds of ignorance, dogmatism, arrogance and intolerance as to often effectually deter all ordinary minds from honest investigation; but in the legislative hall we may reasonably be expected to lay aside all prejudice and fanaticism for the sake of mutual consultation and the best interest of the entire people. And in the investigation of this subject we may perhaps find the majority of the Allopathic school of medicine on the wrong side, and the majority of the people on the other.

On the side of the profession it is a question largely of

money and reputation; on the side of the people it is also a question of money, for they have to pay for vaccinating whatever the physicians receive; but more than this, on the people's side, it is a question of physical perfection, a question of health, and even of life and death. It is a question of medical authority against public intelligence; so once was bleeding and salivation with calomel. But worse than all, the profession is divided against itself. There is no unanimity of opinion in regard to the best virus or lymph to be used, whether it shall be taken primarily from the disease of the cow, horse, man or calf; whether one mark or more is necessary; whether it protects for one year more or less, or not at all; whether it is necessary to prepare the patient to receive it or not; whether it produces serious and fatal injuries; and finally, if it does, what those injuries are.

And this disagreement in the medical profession is no new thing. You cannot find a medical faculty in the whole country, unless it be composed of a single professor, that will agree with itself on many important matters. They differ in diagnosis; they differ in treatment. They have, to-day, for the treatment of disease, so far as therapeutics is concerned, no scientific basis; they are still experimenting. They are blind guides. Their interests, as doctors as at present employed, are not promoted by the health and happiness of the people. The people want to be well and cannot afford to be sick; the doctors cannot afford to have them well. Which, then, will you sustain? The doctors and disease, for the sake of the profession, or the people and health, for the good of all?

Vaccination is certainly the cause of disease, and whatever causes disease must be wrong.

One question more: How shall we manange small-pox epidemics?

Well, in the first place let me say that in absence of vaccination and its cousin-german, ignorance, we shall not have any epidemics to manage. The great fire of 1666 in London stamped out the plague, because it cleansed the city. The plague has never returned. The black death and the sweating sickness of the middle ages have gone with the plague, subdued by the spread of intelligence. Small-pox still remains and increases in virulence and mortality with the stringency of medical legislation.

This is absolutely proved by the great epidemic of 1871 and 1872, "the most destructive in living memory."

Legislation in support of vaccination lures the people into false security. Let us have entire freedom to find the cause and cure of epidemics. Then if an epidemic comes we shall treat it on rational principles.

Small-pox, like all zymotic disease, is the result of fermentation and putrescency. It will be powerless in the presence of cleanliness, ventilation and wholesome food. Pure air is the best disinfectant; and with pure air and mild antiseptics like camphor and boric acid to arrest putrefaction small-pox will lose its terrors for sick and well.

And if we vaccinate, no honorable physician or chemist in all the land can guarantee either the safety or utility of vaccination. While this is so we cannot reasonably compel and there is no excuse for it.

The following propositions are found in Jenner's "Inquiry," published in the year 1800. That the risk (p. 52) of bringing on a violent disease is greatly increased by inserting the virus beneath the skin; that cow-pox (p. 110) may, by accidental circumstance, become a violent disease; that left to chance (p. 111) the sores are capable of producing violent effects, and bear a resemblance to confluent small-

pox; that a difference in organization (p. 114) may develop a poison of the most deadly nature. These are the actual doctrines of the great original vaccinator.

He also said (Baron's vol. 2, p. 13 and 14) that unless vaccinators learned to discriminate with due accuracy between the perfect and the imperfect pustule, it was folly and presumption to vaccinate. Nobody can estimate the degree of danger incurred by vaccination.

A compulsory vaccination law is plainly unconstitutional. It abridges the privileges and immunities of citizens. It is the privilege of a citizen to be well and enjoy privileges in the public school without being compelled to be sick. Vaccination makes him ill. Is the American citizen incapable of judging what medical service he shall have? If not we can safely leave him to decide for himself. If he is how can he decide for the State?

We do not ask you to legislate against vaccination, though convinced that it is wrong. We only ask that you will cease to uphold it and let it stand, as all medical theories ought, upon its merits. We ask you to admit all well-born healthy children of suitable age to the privilege of our public schools from which some are now deprived by this statute. It might be just to exclude children infected with disease, but this law excludes all that are not infected. All must now worship the goddess, vaccina, however filthy, however dangerous, or forfeit school privileges. Was anything ever more absurd. more unjust?

Vaccination cannot stand on its merits, therefore a form of compulsion has been secured. It is wrong.

It is wrong because the citizen has a right to protect the purity and safety of his person. This law violates that right and says that every child shall be infected with disease. It

is called kine-pox, but nobody knows in fact what kind of pox it is. It certainly is not health, nor in any way connected with health. It is an infectious disease. Disease and health are antithetic terms, and the farther we drift from one the nearer we approach the other.

Cancer.

By the medical profession generally cancer is considered incurable, and the use of the knife is the common treatment. Many patients dread the knife and resort to other treatment by specialists. As to the cause of cancer, surgeons do not generally attempt to assign any, and Nussbaum has stated that "cancer is an omnipresent nightmare in the life of a surgeon."

The British Encyclopædia defines cancer as an *eating ulcer,* but says the term is somewhat loosely employed owing to difficulty of diagnosis. As to the cause it says that some local injury may be the exciting cause, but the predisposing cause is constitutional.

Johnson's Universal Cyclopædia has an article from Prof. Pepper. He tells us that cancer is a *malignant tumor;* that the older pathologists believed that a certain dyscrasia (bad condition of the blood or system) so alters the humors of the body as to cause cancer; that cancerous cachexia (depraved condition of the system) causes the tumor is the old view, but, says he, "we now know that the reverse is true," which is to say that the cancer causes the cachexia. As to treatment he has little or nothing to say in this article except to palliate.

The International Cyclopædia tells us that Cancrum oris (cancer of the mouth) is a peculiar form of mortification (death of the part) usually preceded by other serious dis-

ease, and that the symptoms are those that follow the administration of mercury, viz., salivation, loosening of the teeth and decay of the bones.

Dr. Oliver of Cincinnati, Ohio, in a paper read before the State Medical Society, said: "I believe I am correct in saying that our knowledge of this affection is more chaotic than of any other medical subject of equal importance." "The *cancer cell is a myth* and has been relegated to oblivion." As to operations with the knife he says: "You may find in any text-book upon surgery the statement that recurrences after removal are prone to be more malignant, of more rapid growth and more rapidly fatal than was the original growth." He then goes on to say that there is an increasing tendency to larger and larger operations until now Dr. Meyer recommends the removal not only of the mammary gland affected, but the contents of the infra-clavicular (under the collar bone) and axillary spaces and the muscles beneath the breast. "It seems to me," he says, "that in view of the facts adduced, the late operation hastens the death of the patient by increasing the malignancy of the disease." "I have operated," he says, "in a considerable number of such cases recently and with one exception all have died within fourteen months after the operation." As to cure Dr. Oliver says: "Alcohol injected into carcinomata of the uterus has, according to Schultz of Budapest, caused the arrest and disappearance of ten of these tumors." Billroth is quoted as saying that there are a "few cases in which *spontaneous cure* of carcinoma has been observed."

Cancer is admitted to be one of the least understood and at the same time one of the most fatal forms of disease. The number of deaths from cancer in the United States of America each year is over 13,000. Of these over 3,000 are cases of cancer of the breast or uterus, and 2,750 cases of

cancer of the stomach. The deaths from cancer in England and Wales is about 19,000 annually. The technical term, Carcinoma, is a Greek word and signifies a morbid condition, or tumor, resembling a crab; a crab-like tumor. It was probably so named on account of the resemblance of the infiltrated veins to the claws of that crustacean. These veins that are filled with dark, venous blood are sometimes spoken of as the "roots" of the cancer. In defining cancer with scientific accuracy we can scarcely do more than to say it is a bad (malignant) tumor, or bad sore. A simple tumor or hard bunch in the mammary gland might be called a cancer or malignant tumor by one physician and by another be called a non-malignant tumor; and again if a cancer is ever cured it is liable to be considered by many as a case of mistaken diagnosis on account of the general belief that *cancer* is always incurable. One author says that in rare cases cancer withers and may become cured or stationary. Dr. Trall tells us that several cases are on record of foul, fungous and cancerous tumors which had resisted caustics and the knife being cured by a simple and strict dietary. The celebrated Dr. Twitchell of New Hampshire was cured of a malignant tumor (cancer) of the lip which had been extirpated once and repeatedly cauterized in vain by restricting himself to a diet of bread and cream in quantity barely sufficient for necessary nutrition. The reason probably why more cancers are not cured is because the disease-producing habits that cause them are not abandoned. Remember the rule—Remove the cause and the effect will sooner or later cease.

The three chief varieties of cancer are the hard (Scirrhus), soft (Encephaloid) and Epithelial (or Epithelioma). The hard cancer has more of the white fibrous element, and the soft more of the cell element. All can-

cers are generally composed largely of the tissue affected. A cancer of the skin or mucous membrane, which is covered with an epithelial layer, is composed largely of epithelial cells, and is called technically an epithelioma; when it affects the bone chiefly it is an osteoid; composed of bone and flesh together it is called by the profession osteo-sarcoma (bone and flesh tumor); when it grows from a part or affects a part that contains dark pigment, like the choroid coat of the eye, it is then called a melanoid (black-like or blackish); when it resembles, or is supposed to resemble, brain tissue it takes the name of encephaloid (in the head); when it is fibrous, dense or hard like a scar, it is called scirrhus (pronounced skirrus) or stone cancer; when it consists largely of a jelly-like substance it is termed a colloid (glue-like); when it is a fungous growth that is vascular (full of blood vessels) and is liable to bleed badly 'tis a hematoid (bloody) or medullary cancer; on the lip or tongue it is sometimes called a tobacco cancer or smoker's cancer; and on the scrotum, the chimney-sweeper's cancer. In Europe an eating ulcer or canker-sore has been called a lupus (wolf) or a *Noli me tangere* (touch me not). Cancrum oris (cancer of the mouth) is known as "water cancer."

Cancer is generally attended by pain of a sharp and piercing character. The pain is to warn the sufferer to change his habits, otherwise the result will be fatal. Nearly half of all cases of cancer can be traced to hereditary taint. The untoward habits that cause cancer are often continued in the same families from age to age. The same is true of the cause of consumption and scrofula. A proper change of habits will soon eradicate the disease, even though it be hereditary. Cancer is a disease of degeneracy and is more frequent after middle age when the vital pow-

ers are waning. It is a *local death* or moribund condition of the part affected, with an attempt constantly made by the enfeebled vital force to renew and heal the part.

The mortality from cancer increases with age up to 65, after that diminishes rapidly, because those who lead a cancerous life do not generally live much beyond 65 or 70 years.

The disease is more common in females if we include cancers of the breast and uterus, but apart from these cancer is quite as common among men. Hard cancer more generally affects aged people, while soft cancer is most common in middle life. Hard cancers are rarely observed till after 40.

Cancer and canker were probably the same word originally, but in canker the "c" of cancer has been displaced by a "k."

Canker is a term applied to any corroding ulcer of the mucous membrane. Cancer is a corroding ulcer oftentimes, but is more painful and more difficult to heal than canker, and indicates a more depraved condition of the blood. The discharge from an open cancer is fetid and ichorous.

A cancer is often confounded with simple tumors and even with harmless warts and moles. A simple tumor is an abnormal bunch, growth or swelling. Tumor does not imply, necessarily, a corrupt state of the blood as cancer *does*. A tumor may be free from pain, but a cancer is painful. A simple tumor is non-malignant, and does not infiltrate surrounding tissues and neighboring glands; a cancer does.

In cancer of the breast the axillary glands (glands in the armpit) are generally sooner or later enlarged or affected.

Cancer of the uterus is attended with local pain and soreness and by a discharge of matter that is foul and offensive. Besides the breast and uterus of the female, cancer also affects the lip, eye and various other parts of the face, the tonsils and throat, stomach, rectum, testicle, tongue, skin, bone or any other tissue whenever the blood becomes sufficiently corrupt to allow it.

Under present conditions and under the ordinary treatment, which does not generally require a change in the habits of life, cancer is generally fatal and runs its course, on an average of about three and one-half years. Eighty-five per cent. of all cancers removed by the knife return, and most of them within a year, and yet at all the leading hospitals of towns and cities the knife is usually the only remedy employed, although it offers little or no hope of recovery. As a rule we may safely say that the use of the knife and anodynes (given to relieve pain), hasten a fatal termination. It is claimed by some that the knife has in some instances proved curative, but such cases might have been simple cases of non-malignant tumor.

Dr. Walsh long ago contended, and it has been confirmed by others, that the excision (cutting out) of a cancerous tumor seems frequently to *awaken* a dormant force and hasten a fatal termination. Excision cannot remove cancer because it is a constitutional disease—a depraved state of the entire system. Excision may remove a simple tumor that *has been called a* cancer, but not a disease that affects and pervades the whole body. One surgeon of note admitted that he cut out cancers chiefly for the *moral* effect upon the patient. The idea of removal, however fallacious, may temporarily allay the fears of the patient, and when the surgeon loses all hope of cure he often resorts to morphine or other drugs to allay pain that hastens the end. It

is better to rectify the life of the patient than to rely upon the knife or use of anodynes.

The older pathologists, it is admitted, believed that a certain dyscrasia (bad habit of body or bad blood) so alters the fluids or humors, as they called them, of the body as to *cause the disease*. The *modern* disciples of Esculapius have reversed this natural order and now claim that the cancer or tumor *first* makes *its* appearance and then later the cancer poisons the blood. What first causes or makes the cancer they do not say. How to treat it successfully they do not know, nor can they ever tell till they first find the cause. Remove the cause that the effect may cease is, as we must know, the only law of cure. Cancers are generally incurable simply *because* the patient *does not correct his life*.

Error in some direction by somebody is always the primal cause of disease. Now what is the error that causes cancer? Cancer is a disease of degeneracy and depression, as is shown by the diminished temperature of the body. The vital force is impaired or weakened, and is not able to mature healthy cell growth. The cells of cancer are, it is said, embryonic or immature cells, but it is not settled whether they are produced by poison and retrograde metamorphosis, or whether their growth is *checked* by unfavorable conditions. In either case we must remove depressing influences, both mental and physical.

Mental distress is a very depressing agent. The patient must find a better philosophy of life and be inspired with hope and courage. Extremes of temperature, heats and chills, must be avoided. Overheated rooms are very debilitating. Cool, but not too cold air, while exercising, is invigorating.

The diet must also be corrected. Food must be taken to

sustain healthy action, but not allowed to accumulate so as to ferment and rot in the system, for many products of decomposition of organic matter are known to be poisonous. No *unnatural* stimulants, irritants, or narcotics can be allowed with hope of recovery. We must invigorate the vital force in the system and purify the blood by rational measures; such as wholesome food and drink, lung exercises, to properly air the blood, moderate open air exercise, hand baths judicially taken, and daily exposure to the direct rays of the sun, if possible.

Cancer may be distinguished from other tumors by the sharp and shooting pains which attend cancer; and, when the cancer is an open sore, by the fetor attending it.

So long as a tumor is not very inconvenient, is not painful, and is not an open sore, *constitutional* treatment is quite sufficient. *Local* treatment is required only when the tumor becomes very inconvenient, sore, or painful. A proper *vegetarian* diet is, as a rule, less liable to corrupt the blood and system than animal food. It is said that the Jews who eat no swine's flesh, have no cancers. Some animal products, milk, cream, or eggs, if fresh, pure and sweet, may, perhaps, be allowed sometimes for the sake of variety; and possibly oysters or fresh fish, if *just taken from the water*. An unnatural appetite must not be pampered or indulged; but a healthy appetite must be sought by means of abstinence and pleasant work or exercise in the open air, and when found be only moderately indulged.

When a cancer has become plainly developed into a *painful* chronic tumor or *fetid* open sore, it is then time to employ special and local treatment which will now be considered.

Material Agents and Local Treatment.

Many substances have been used as external applications to remove cancers. The chief of these are seven in number, viz.: chromic acid, caustic potash, solid extract of bloodroot, chloride of zinc, chloride of bromine, and arsenious acid or arsenic. The dried juice of the leaves of garget (Phytolacca decandra) and some other substances have also been used. Almost any *caustic* substance will destroy fungous growths. The ideal cancer plaster is only sufficiently caustic to destroy fungous growths *without* seriously affecting healthy tissues. *Robiquet's paste* is prepared by melting together equal weights of caustic potassa (potash) and gutta percha. This can be moulded in any form desired, and will retain its form. Dip it in alcohol for a few seconds and it is ready to apply. The eschars from this paste are very precise in their form. The solid extract of belladonna, conium, morphine, or the watery extract of opium, are sometimes mixed with the paste to deaden pain.

The following is a good formula for a *cancer plaster:* Chloride of zinc, three ounces; pulverized bloodroot and rye flour, of each one ounce; bayberry wax, one-half ounce; solid or dry extract of conium, three drachms; and watery extract of opium, sufficient to make a proper paste. Mix and apply.

Some use flour, liquorice powder or starch, instead of the bayberry wax. This plaster is allowed by some to remain on twenty-four hours, others prefer to alternate every twelve hours with a poultice till the cancer sloughs away. The poultice should be changed every three or six hours if it gets dry. The eschar can usually be removed in about ten to twenty days, leaving a suppurating surface to be dressed like any ordinary ulcer. It is well in some cases to prepare the patient by suitable *constitutional* treatment and diet for two

or three weeks before the local treatment is commenced. Some apply the plaster but once; others, every day, alternating with a poultice every twelve hours, till the eschar is loosened or detached. In any case it is well either to put some antiseptic into or upon the poultice, or use an antiseptic wash upon the sore when changing the poultice. Tincture of myrrh is a good wash. Simply wet the sore with the wash.

If it is desired to destroy a tumor that is still covered by an unbroken skin, the cuticle must be first removed. A mild caustic does not act upon the cuticle.

If the eschar is loosened and is still held by veins now rendered useless, the "roots" may be clipped with scissors. Where there is danger of bleeding, as in the hæmatoid variety of cancer, the following may be preferable:

Mix equal parts of Monsel's solution (solution of persulphate of iron) and liquor ammonia. After an hour pour off the liquid and place the magma or residue, on a filter; when it is of the consistence of an ointment mix in a mortar with half the quantity of calves' suet, and then finally add and incorporate chloride of zinc, one-half ounce to an ounce of the mixture. Apply as before.

Malignant growths may also be destroyed by electrolysis, or galvanic current.

The following wash has been used successfully on sores which were believed to be cancerous. Oleum Cadinum (oil of Cade), one ounce; Saponis Viridis (green soap) and Glycerine, of each, one-half ounce; and Alcohol, four ounces. Mix and wet the parts with the mixture twice a day.

For a BLOOD SYRUP the following may be used if thought necessary, for temporary relief:

Pipsissewa leaves, two ounces, liquorice root, Juglan's

Cinerea (butternut bark), Senna leaves, and cardamom seeds, of each, one-half ounce, all in coarse powder. Make a tea or infusion with three quarts of boiling water; let it stand four hours then strain and bottle. Keep in a cool place and give a wineglass or more three times a day as may be necessary to keep the bowels soluble, or at least free.

The same or a similar preparation may be made with the *fluid extracts* of the above substances.

In cases of *cancer of the uterus,* it is necessary to keep the parts well cleansed daily with some antiseptic, like tincture of myrrh, or a saturated solution of boric (or boracic) acid, but avoid always all unnecessary irritation. The speculum, or vaginal syringe, may be made useful.

In *cancer of the stomach* the patient must be confined to *liquid food taken at regular intervals and in small quantitity,* in order to allow the stomach opportunity to heal, as any considerable distension or irritation of the stomach interferes with the process of healing.

Causes. While the specific cause of cancer is not definitely known, the *probable* causes may be distinctly stated. These may be presented under two heads, viz.: mental and physical. Any state of *mental depression* produces a corresponding depression of the physical organism. Mental distress from grief, fear, apprehension or anxiety, or any other depressing passion or emotion may be set down as a predisposing cause of cancer. Canker of the soul is a sufficient cause.

Among the probable *physical* causes may be mentioned the use of tobacco, swine's flesh, vaccine virus, drugs, especially mercury, iodide of potash, and alcoholic drinks. Whatever tends to corrupt the blood, like vaccination, or to depress the vital force, may be a direct or predisposing cause.

We regard cancer as a local decay or death of the part like

the decay or rotting of an apple; and the rotting, or withering of the apple as the case may be, illustrates the two kinds of cancer known as "hard" and "soft" cancer. We may remove affected parts and cleanse the sores with caustics, plasters and washes, or excise with the knife, but *a permanent cure depends upon a corrected life.*

Diet for Cancer Patients.

A noted cancer specialist says in regard to diet: "Avoid rum (all alcoholic liquors) and tobacco, salt and salted provisions, pork or swine's flesh, tomatoes, vinegar, strong coffee, and in cases of scaly cancer, fish. May have roast beef, roast lamb, lima beans, carrots, onions, raw egg and milk, catnip and sage tea."

We might, perhaps, allow in addition, boiled or baked rice, whole wheat meal bread, if properly made, sweet cream, parsnips, a baked apple, grapes, fresh raw oysters—must be freshly taken from the sea—and the juice of lemons.

Remarks.

Let no person be alarmed because cancer is *in the family* beyond learning the lesson that hereditary disease requires for cure a radical change in the habits of life. A personal friend of the author whose father and uncle had died of cancer conceived the idea that he had cancer of the stomach, and led by his fears and the advice of a neighbor, resorted to the internal use of Poke Root for its cure, with fatal results. An autopsy revealed the fact that his stomach was perfectly sound, but the gall bladder contained bile which was black as ink. The mortification of the bile and body was purely the effect of fear and drugs. The Poke which he took might possibly have been "Indian Poke" (Veratrum), instead of Phytolacca, or Garget. Both are called Poke. In other

cases, young women sometimes resort to dangerous surgical operations because of *supposed* cancerous disease, or tumors, when, in fact, a little better knowledge of themselves would enable them to escape both danger and the deformity. Study the first part of this article carefully. The action of plasters containing arsenic pervades and poisons the whole system more or less. Remember, there *is* no scientific test for cancer

Cancer cases have increased in number since vaccination was practiced. This is historic.

About one-fifth of all cases are said to be traced to some mechanical injury; but it is likely that the predisposition was the result of vaccination, some error of life, or bad habit. A simple mechanical injury always gets well under favorable conditions.

Hints to the Profession.

Chromic acid is an energetic, very painful caustic, and may give rise to poisoning. Nitric acid is also very painful and diffuse caustic. These should not be used.

Chloride of zinc is less painful than arsenic and there is no danger of poisoning. It may be mixed with rye flour or powdered starch. Make the paste half or two-thirds flour. The ingredients may be mixed with a little alcohol. Morphine or conium if added to the paste in sufficient quantity will make the plaster nearly or quite painless. Spread on thin leather or surgeon's plaster, apply and cover with a bandage. Remove in twelve hours and apply a poultice of powdered slippery elm or flaxseed meal. May repeat the plaster twelve hours later if necessary, until the eschar loosens or drops out. The more the chloride is weakened with some neutral substance the slower it will act; and the firmer the paste is made the more sharply defined will be the eschar, and the narrower the zone of inflammation around

the plaster. If the plaster has too much liquid, its action will be more diffused. Quicklime is sometimes used in combination to make the eschar drier or firmer.

The plaster is nearly painless if made of one-fourth part morphine and a little choloform. Make the paste or plaster about half the thickness of the eschar desired.

The Vienna Paste as described in the United States Dispensatory, is used by some surgeons. It must be kept in well stoppered bottles.

Canquoin used only one part of the chloride of zinc to four of flour.

The part to which the paste is to be applied must be cleansed and dried to prevent diffusion of the caustic. The surrounding parts may be protected by strips of adhesive plaster if necessary. The epidermis or scarf-skin may be removed if necessary, by rubbing on two or three drops of nitric acid of the specific gravity of 1.35, or by use of a fly blister. The acid causes a little pain for about fifteen minutes.

Caustics should never be applied in the mouth or to a *mucous* surface. The action of the caustic cannot be confined on mucous surfaces.

In cancer of the mouth a gargle of pure tincture of myrrh or some other antiseptic is useful. The application of ice to cancers is condemned; so is compression.

A "rose" cancer is a soft, spongy sore that turns out like the petals of a rose, and is difficult of cure like all cancers. Seek and remove the cause of the disease, is the watchword for all.

Healing Ointment.

Take of Calves' Suet, 2 quarts; Beeswax, 2 ounces; Strained White Pine Pitch, two fluid ounces. Melt the suet and while it is still hot incorporate the other ingredients. Spread this ointment on old or soft linen and apply. If the sore needs disinfecting, wet it with clear Tincture of Myrrh, but do not otherwise wash or irritate any raw surface.

We do not know why plasters made of other substances have any advantages over the ones here given. *Some* caustic action is necessary if the morbid growth is to be destroyed.

Mumps (Parotitis).

An inflammation of the parotid gland. Said to be contagious or epidemic. Swelling at the angle of the jaw and pain generally prevent opening the jaws for four or five days. Liquid diet and hygienic treatment is all that is required. Is generally devoid of danger.

Dysentery (Diarrhoea attended with bloody stools).

The bloody discharges show that there is inflammation and ulceration of the mucous membrane of the intestine. It is generally attended with pain and tenesmus (straining). Is more frequent in tropical climates, and marshy or malarious districts. The cause may be traced to acrid substances taken as food, or to other errors of diet. Unripe fruit, or bad water may be the exciting cause. The diet must be of mild character, and properly restricted. A nice cup of coffee, without milk or sugar; fresh buttermilk, if agreeable to the patient; a little thoroughly cooked rice, taken with a few spoonfuls of sweet cream; toast water; or possibly mutton broth, if allowed to cool and be deprived of its fat, may be allowed. A warm sitz bath once or twice a day for fifteen or

twenty minutes, followed by use of the dry towel and plenty of friction of the skin with the dry hand may be useful.

The treatment is also sufficient for the cure of diarrhœa.

Hiccup, or Hiccough,

is the spasmodic action of the diaphragm. It may be caused by some irritating substance in the stomach and is *generally* a transient inconvenience. When it occurs in the last stages of some acute disease it is considered a grave symptom, and may indicate local gangrene, or giving way of the nervous energy.

Rye Mush, or Rye Pudding.

Procure freshly-ground rye meal, sift it through a coarse sieve so as to reject the innutritious portions, then stir it slowly into boiling water. Make it thick or thin as you prefer, and eat it with a little butter, sweet cream, molasses, or milk. Milk, or cream, is preferable for health. This is a dish fit for a king if made as directed. Remember, freshly-ground, sifted, rye meal, stirred slowly into boiling water. Cook ten or fifteen minutes. Taken for breakfast, without other food this is a valuable dish for all persons troubled with constipation.

Naevi (mother's marks).

These are caused by strong and sudden emotions of the mother during pregnancy. They consist of excessive vascularity of the part, *i. e.*, of increased size and number of bloodvessels, generally at the surface of the body. They may be destroyed, it is said, without pain, by pencilling (or painting) with a mixture of corrosive sublimate and collodion, one part of the former to eight of the latter. For small naevi a single pencilling is enough; large ones should be destroyed gradually. Corrosive sublimate is a deadly poison when taken internally.

Rate of Pulsation.

While the normal rate of the healthy adult is usually set at 72 per minute, the pulse has been counted as low as 20 in some persons, and in chronic disease of the brain 16. It varies from 16 to 150.

Cavities of the Heart.

Insects have a heart of one cavity; fishes two cavities; batrachian reptiles (toads, frogs, etc.), with serpents, three cavities, two auricles and one ventricle, and birds and mammals four cavities, two auricles and two ventricles.

Coughs and Colds.

Lemon juice sweetened well with granulated or loaf sugar, in teaspoonful doses, is an agreeable remedy for any irritation of the throat, or cough. Use at the same time lung exercises, or deep breathing. The latter with *abstemious* diet and vigorous daily hand baths of the entire person is the best remedy for all colds. Colds arise chiefly from two causes—too much food for the stomach, and too little air for the lungs; less carbon and more oxygen is the remedy—or, in other words, eat less sugar, fats and oils, and breathe more air. An active life, with vigorous and robust health, fortifies the body against inclement weather, impure water, miasmatic disease (Ague) and all forms of contagion.

Social and Solitary Vice.

The only way to protect the young from evil habits, including solitary vice, is to watch and teach correctly, first, all servants and nurses of the young, and, second, all children and youths, till the judgment is fully matured and the mind

properly educated, and thus securely fortified. In educating, 'tis possible to so direct the mind and vital energy into other channels that no *unnatural* desire shall arise, and reason be made to dominate all the passions of the soul. *Muscular development* must precede and accompany all mental development. The passions will at all times be in abeyance when the mind is properly directed, and the muscles properly used in some industrial pursuit, or healthful exercise. The well-trained and harmoniously developed man is able at all times to command at will every organ and function of his body. It is the neglected, untrained, sickly and puny child, mentally and physically, that yields to vice.

Again, all natural curiosity of the child must be satisfied by the *presentation of truth and facts,* and not be left to lead its victim into error. The teacher of anatomy, physiology, and philosophy, and not obscene literature, should be the channel through which information comes to the young.

The sexual appetite at full maturity of the person is as natural as the appetite for food, and under proper educational influences will be considered much more sacred. The one concerns only personal health and personal life, the other the health and life of the race. With honest and sufficient means to live without stealing, or violating the law of justice, human life would be more abundant on this planet, and the gratification of the procreative function more natural. Deprivation of natural opportunities for labor and honorable means of subsistence lies at the bottom of much vice and crime. The earth belongs of right to the living, and not to the dead; to all, and not to a few. To each what he produces, and to all equal natural opportunities is the law of exact justice. The sexes were made for happiness, and not for vice and misery; and human laws that first compel, and then punish crime, should no longer stain our statute books. A *true*

political and health education is more needed, even, than a business or literary education. Man must have opportunity to realize his ideal. Full maturity is desirable for marriage, and man does not mature till into the third decade of his life. Lycurgus, who gave laws to Sparta, forbade to marry till twenty-seven and twenty, respectively, male and female. Till full maturity is reached, strict chastity will contribute to health, vigor and long life; and with these requirements go happiness, the greatest enjoyment, and the physical perfection of the race. The semen is the seed of man; and to waste it is to waste the essence of life to some degree. A certain amount of procreative fluid is provided at maturity for the purpose of reproduction, and its highest and best use involves an act in which man most nearly resembles his Creator. It should ever be a holy (whole, complete perfect) act as to body and soul, and not merely a pleasurable one. To act for *pleasure only* is, under any and all circumstances, prostitution of our functions and faculties. Any *excessive* loss of semen enervates at once the body and the mind. What constitutes excess, it is more difficult to say. As maturity approaches, under the present unnatural customs, regime, and habit of society, it is not very uncommon for the semen to escape *in*voluntarily, and by purely emotional influence, once in three or four weeks. Such an occurrence is looked upon by some physiologists as entirely natural; but it is the opinion of the author that involuntary loss at any time should lead one to inquire whether he cannot improve his diet somewhat so as to have purer blood; whether he has his sleeping room properly ventilated, and his bed free from too heavy clothing; whether he is taking all the *physical exercise* he needs; and, lastly, whether he is *directing his mind* in the best channels for the good of himself and the race. If he is doing all these he need not be alarmed by any involuntary

loss. It certainly should not drive him to the use of drugs. So long as he does not abuse himself in any way, or unnaturally excite any organ or part of his body, he need have no fear. Under proper conditions every organ of the body will, at proper times, respond to the soul. It is a mistake to suppose that continence, or celibacy, is ever injurious to individual health. The voluntary parts of the body are entirely subject to the human will; and the involuntary parts are subject to the soul. It is much as we think. A celibate horse, if we may use the term, is as healthy as any other, and so of other animals. In the natural state, unrestrained by man, they will procreate; but they never descend to self-abuse. We speak of some things as *beastly*, but no wild beast ever degrades himself like man. In his own sphere the beast lives better. It is the abuse of organs, not continence or celibacy, that injures the health. Neglect of the proper use of the muscles, or of the mind, either or both, and gross and stimulating food often lead unconsciously to sexual abuse or excess. The flow of blood to any part is governed by the soul and largely by the thoughts and feelings; and the increased flow of blood to the part determines the action. Use up the energy in the muscles, or brain, and the sexual desire will never be imperious. This can be proved as often as you try it. A wholesome diet, with full intellectual and physical employment, tends to allay the sexual desire; and so will *muscular* activity alone. Do not fear impotency because you cannot call into use all the organs of the body at once. When the mind, or soul (which is the impelling power), is concentered in the brain, and wholly occupied in intellectual labor, it will not impel at once all other organs; nor can the currents of blood, as a general thing, be *suddenly* turned from their accustomed channels; and whenever the nervous energy is exhausted by manual, or intellectual labor, nothing is proper but rest. Rest is not impotency. The latter comes only from

abuse. The heart rests at once only a fraction of a second; the upper brain a few hours while we sleep; the muscles, without injury or atrophy, a few days; and the sexual organs, in perfect safety, for many years—a lifetime, if the soul so wills. Occasional emissions, occurring involuntarily, when the seminal vesicles have become filled, may be considered a natural process. If you desire it otherwise, so *use up the vital energy in exercise of brain or muscle,* that the testicles themselves shall have rest; then the semen will not be so rapidly secreted. It is possible that the semen once secreted and occupying the seminal vesicles may be absorbed and the vital energy thus conserved. At at any rate, continence is perfectly safe, provided the passions be not *unnaturally* excited. Continence or chastity, even for fifty years, in the male, is not followed, necessarily, by impotence or sterility; nor is it a cause of sterility in the female. Chastity, continence, and virtue (manly vigor) are never a bar to marriage, health or happiness.

Masturbation from being practiced alone is sometimes called the *solitary, or secret vice.* Onanism is another name for the same thing, though in strictness of speech they differ. This vice is more common than most people suppose, and will never be done away while it is considered too delicate a subject for physicians, mothers and teachers to handle. The young must be properly guarded and educated. Once the practical results of solitary vice become fully understood by any person of sound mind it will be discarded. Nobody burns his fingers purposely when once he understands the nature of fire. But there must be teachers.

Children should not be left entirely to themselves until good habits are fixed; and this can be done quite early. The age of eight years is not too early to have children understand the use of all the organs of the body. Do not allow

errors to take root in the mind. Satisfy curiosity, not with error, but with truth. The picture need not be overdrawn. Truth alone is sufficient.

Genital and Urinary Organs.

The human body, as such, is one complete whole, and in considering the cause and cure of disease no important part of the body can be wisely ignored. The digestive organs must always be rightly managed in order to supply to each part of the body proper nutriment; the lungs must be made to work efficiently in order to supply vital air and eliminate from the blood the deleterious carbon dioxide; the skin, which is a large and important organ, covering nearly 2,000 square inches of surface, must be made to throw off its proportion of waste matter; the lower bowel, and the kidneys, which are also eliminating organs, must be kept clean and in constant order, lest the daily accumulations of waste may give rise, through putrefactive changes and fermentation, to noxious and irritating matters that poison and destroy; and, above all the passions and emotions, must be rightly directed, in order to keep all the activities of the body properly and harmoniously engaged. Of this work, so vast and important to the individual, the human *mind*, acting through the *cerebro-spinal* nerves and voluntary muscles of the body, must perform well its part; but there is another important factor, usually entirely overlooked or ignored in so-called medical science, that operates through the *sympathetic* nerves and the *in*voluntary muscles of the system, and carries on perfectly and alone, when not interfered with by the finite human mind, all the vital processes of animal life. Now these two factors which we may call the individual or human mind and the universal mind, must fully co-operate in the cure of disease and preservation of health or the desired result will

never be reached. With the work of the universal mind the individual has nothing, directly, to do, on his part, but simply to assume and religiously keep a *proper attitude of thought and feeling*. The sub-conscious activities that are all carried on through the sympathetic nerves, and which include the vital processes of nutrition, secretion, gestation, respiration and circulation, go on perfectly of themselves, *provided* the cultured and loyal soul assumes the proper attitude towards the universal mind, and supplies for the growth and repair of the body suitable material and suitable conditions. As to material, a little pure, simple and wholesome food is all that is necessary. The horse and ox thrive upon grass alone, the cat and tiger upon flesh, the bird upon seeds and berries. Man is omnivorous, and whether he shall follow the horse, the tiger, or the bird as to his food is yet to be settled. He can live, for a time at least, upon animal food; and he can surely and safely make his diet frugivorous. The one important thing as to diet is to have his food simple, pure and wholesome. As to conditions, beyond the very important one of *proper attitude and status of the soul*, the most important are those of cleanliness within and without, due activity and rest of body and mind, and the most perfect use of vital air and sunshine. *Cleanliness alone* would, as we fully believe, do away at once with all venereal disease; and proper *diet and exercise* would soon remove all forms of kidney disease. If people are filthy *within or without* they will sooner or later be diseased. Filth and health are incompatible; but it is almost useless to wash only the outside of the body when the inside also needs cleansing. The stomach and bowels are sometimes sources of infection. Now *fasting* for a few days and the abundant use of wholesome and diluent drinks, with such exercise as the patient can reasonably take, will, generally, thoroughly cleanse the *inside* of the body. True

medication, be it remembered, is the application of *right principles* as well as the right use of material agents.

Inflammation of the kidneys or bladder, under which nearly all forms of kidney disease may be considered, requires, in general, the same general treatment as inflammation in any other part. We must first remove the offending cause. And here we should observe that some drugs, now often given as remedies, are not remedial in any true sense, but are the actual *cause of disease.*

Of these pathogenetic drugs turpentine, copaiba, cantharides, mercury in all its forms, and strychnine, which have been much used in the past, are local irritants and poisons Tertiary syphilis, which is attended with rotting of the bones, will be called in the true nosology of the future, *mercurial disease.* It is, no doubt, the result or effect of mercury, or of some mercurial preparation, and all that syphilis has to do, as we believe, in connection with such cases is simply to give an introduction of the patient to the profession; and the medical profession is wholly responsible, as we believe, for the tertiary symptoms of this complaint. Thus we shall eliminate one stage of this dread disease by omitting the use of all mercurial preparations.

Aside from poisonous and irritating drugs, uric (or lithic) acid often plays sad havoc with the kidneys and bladder. This acid, which up to this hour is considered by the profession as a normal constituent of the urine, is always an irritating substance wherever found in any part of the body, and as an irritating substance it cannot be reasonably considered a *normal* constituent of the urine. A *normal* constituent cannot produce *ab*normal conditions. The formation of this acid in the body by fermentation, or by the decomposition of urea, which is the normal product or secretion of the kidneys, and its combination with sodium and ammonia to form

urates, is a sufficient explanation of all disease known as gravel, urinary calculi, granular degeneration, and inflammation of the kidneys. The remedy is to arrest the fermentation that gives rise to the formation of uric acid and to abstain from the use of all food which contains soda and baking powders. Among *other* causes of inflammation of the kidneys we may mention the excessive use of salt, sugar, and albuminous food. These load and clog the blood. The *gluten* of wheat, the *casein* of cheese, the *fibrin* of flesh, the *white* of eggs, and the *legumin* of peas and beans are all albuminoids, which, when taken in *excess,* lead to albuminuria (albumin in the urine). The kidneys and urinary passages form, as another has said, the *sink-spout* of the system, and any *excess* of albumin in the system is generally carried off by the kidneys. Thus we have *an explanation* of one of the constant symptoms of what has been called Bright's disease, viz.: albuminuria. Another constant symptom of Bright's disease, according to medical authors is dropsy of the extremities and abdomen. Now, dropsy may be caused by anything that clogs the circulation, and albumin may readily do this; so also may much sugar, or salt, for these greatly increase the specific gravity of the blood.

The remedies, then, for inflammation of the kidneys, are a reasonable or scanty diet of simple, pure and wholesome food, diluents (water or fruit juice) to wash out and cleanse the blood, healthy action of the skin and all the other eliminating organs by healthful exercise, so far as is practicable, and the free exercise of all the better emotions of the soul. A purely milk diet, or the use for a few days of sweet whey, or the juice of acid fruits, like that of the lemon, and baked or stewed apple, is often recommended, while some physicians confine the patient to animal broths.

Another form of Bright's disease, commonly called "chronic Bright's disease," is the amyloid, or waxy kidney; which probably results from an excess of starch or starchy food, as the word "amyloid" implies or suggests. The kidney is enlarged, and infiltrated with material resembling starch granules. The only known remedy for these difficulties is a change of diet and more healthful conditions.

Inflammation of the kidney, if long continued, may lead to suppuration or the formation of pus, which may be detected in the urine. Such a condition is called suppurative nephritis. You will bear in mind that inflammation of any sensitive part is always attended with almost constant pain, except in cases of paralysis, or unconsciousness. The treatment is the same, so far as applicable, as that for inflammation of any other part. Pure milk diet, rest in bed, diluents, and warm teas to promote perspiration, are the essentials.

URAEMIA is a term used for blood-poisoning, and by what is commonly *supposed* to be *urea,* which is the natural product of renal secretions. Uræmia is more likely caused, however, by poisonous products of *putrefactive changes* that take place in the system. It sometimes follows surgical operations made on the uterus or bladder, and might then be called Pyæmia (pus in the blood). Uræmia is generally attended by convulsions and coma, or unconsciousness. The usual treatment for uræmia gives little promise of recovery; and the condition is usually considered very grave.

RENAL CALCULI is the name applied to various concretions, gravel or stone, found, or lying in the bladder, ureter or kidney. If not too large these concretions may escape from the body through the natural urinary passages, but they always cause more or less inflammation and pain, and sometimes hemorrhage and abscess. There are several varieties of renal calculi. They are composed of some earthy

substance, like lime or soda, united with some acid like the uric, oxalic, or phosphoric. Their source is probably the use of "hard" water that contains lime; use of baking powders in our food, and the development of acids in the system by process of fermentation. The inflammation of the bladder, caused by these earthy concretions, takes the name of *"cystitis,"* which is usually considered a disease by itself, but it is the natural result of gravel or calculi. As a solvent for uric acid calculi the Lithia waters and alkalies are *reputed* useful; and for phosphatic calculi the benzoate of ammonium in ten grain doses, dissolved and well diluted with water, is given twice a day. The important thing is to *regulate the food and exercise.*

In cystitis there is usually, also, more or less catarrh of the bladder. The urine contains pus and red blood corpuscles. There is present in cystitis severe *local* pain, and frequent but scanty micturition. The urine may be voided drop by drop, and followed by distressing vesical tenesmus, the result of spasm of the bladder. The use of the catheter generally shows that the bladder in cystitis is not well emptied by natural effort, and the use of the catheter every six hours may be necessary to give relief from too much distention of the bladder which aggravates the distress. In other respects the treatment for cystitis is much the same as in inflammation of the kidney, viz.: rest, milk diet, hot sitz baths, fomentations, etc. A suppository, placed in the rectum, made of opium and belladonna, or other anodyne, gives some temporary relief from pain, but is otherwise useless.

DIABETES is a term applied to an excessive urinary discharge. In this disease there is always great thirst. If sugar is present in the urine the condition gives rise to what is called diabetes mellitus, and if sugar is not present it is called diabetes insipidus. The quantity of urine voided daily in

diabetes varies from one to four gallons. In cases where sugar is found in the urine the specific gravity of the urine varies from 1025 to 1050, and the amount of sugar daily eliminated varies from an ounce to a pound, or even more. When there is no sugar in the urine the specific gravity is low, scarcely reaching more than 1007. Constipation is common to both forms of diabetes and the skin is always harsh and dry. The cause of diabetes mellitus is ascribed to the excessive use of malt liquors, sugar and sweet and farinaceous food. Of course there must be a cause for all symptoms, and the cause of thirst and increased quantity of urinary secretion may be the excessive use of table salt and salted meats, and the large quantity of fluids subsequently taken to quench the thirst.

The only hope of recovery from diabetes is a radical reform in the life and habits of the patient and a return to correct living.

STRICTURE of the male urethra generally arises, as we are compelled to think, either from abuse of the catheter, used by the surgeon, or from the injection of caustic preparations used in the ordinary treatment of urethritis. We rarely or never hear of stricture of the female urethra. The best treatment for stricture is to introduce once carefully a bougie of medium size, well smeared with some bland ointment like vaselin or lanolin, and then afterwards depend on constitutional treatment.

IMPOTENCE, or loss of virilty, may be the result of drug medication, especially the use of drugs now often administered for its cure; but is more generally the effect probably of onanism, venery, or what is known as secret vice. Any long-continued, or excessive indulgence or abuse, is sure to result in weakness or debility of the organs thus abused. For vigorous health every organ, as well as the entire body, must

be consecrated to the highest and best use and happiness, not only of the individual, but of all mankind. Nothing will restore health in cases of impotence or physical debility like physical exercise of the voluntary muscles of the body under proper conditions as to time, food, sunlight, air, bathing and a cheerful and happy frame of mind.

Urethritis (inflammation of the urethra) is the proper term for what is now *erroneously* called gonorrhoea, or clap. It is caused primarily and secondarily by uncleanliness; while the predisposing cause is improper diet that gives rise to impure blood and impure secretions. A local application once a day of some cleansing wash like tincture of myrrh, or some good toilet soap and water, with a small syringe, will facilitate the cure.

Vaginitis, or catarrh of the vagina, is a proper term for what is vulgarly called Lucorrhœa. Cleanliness and healthful living as to diet, air and exercise will soon cure.

Venereal Disease.

No noxious weeds, as all admit, should ever be allowed to grow in our gardens, nor yet in the public domain. Disease is more unsightly, more unwholesome and more foul than any weed that grows. Why, then, allow it to exist? It is not heaven-ordained but always man-devised. It comes often of neglect. It comes of institutions born of narrow-minded selfishness, of false ideas. In both a political and a sanitary sense society needs reconstructing. But we shall not be likely to improve society till we first see the need of it. Vice must be uncovered, rottenness exposed, error refuted, and truth established. This cannot be done by inaction. We must speak, we must write, we must agitate, we must know and do. We need not be anxious to condemn or to punish. A wiser Being than man has provided for all that . We

need only to show a better way, and assist our fellow-beings into it. All will be glad to join us in securing better bodies, better health and more happiness. Urged by these motives, and such as these, it becomes our duty to introduce to our readers a subject which is often ignored in so-called "polite circles." Many are going wrong from sheer ignorance. Health is not merely a personal matter. It affects society. For our own sakes, then, we must have public spirit, and knowledge is the birth-right of all. Persons not properly informed, both married and single, are sometimes afflicted by what is called "private disease." Now there ought not to be any such thing as private or venereal disease. *Cleanliness* and *purity* would entirely prevent it. But this plan is not always applied. People are not always clean, nor is purity universal. There is still another way to forever prevent all "private disease," and it is an infallible prescription. Make all disease *public*. In highest heaven nothing is concealed. Let disease no longer be concealed by a word whose very etymology is unknown, viz.: "Syphilis," nor yet by another word which is supposed to be very scientific, viz.: "Gonorrhoea," but which is entirely *un*scientific and misleading; but let all know where the dangerous rocks are that they may be avoided. We assert, without fear of successful refutation, that more disease and suffering have been caused, and more permanent injury done, by remedies (so called) administered by the profession for private disease than were ever caused purely by the disease itself. What is called "tertiary syphilis" is, without doubt, the result of some form of mercury given as a medicine, and many of the "strictures" that so often attend on private disease in the male are, as we conceive, the result of the treatment administered. What the people most need is knowledge, and knowledge is inconsistent with anything private, secret, or largely unknown.

Disease is always the result of error, and error is nursed in darkness and cured by knowledge. Venereal disease is the *result of impurity,* or uncleanliness. There is no doubt of that. Now what is purity? Married people may generate disease even without directly violating their matrimonial vows. Impurity does not necessarily imply promiscuity, though generally so considered. Promiscuity is an error of itself, but is not necessarily connected with syphilis. Impure food, impure thoughts and impure bodies are the cause of venereal disease. It is not a matter of contagion, merely; it is developed by unwholesome living and debauchery, and cured by cleanliness and right living.

The devil has borne the sins of the world too long. It isn't the devil that afflicts mankind; it is themselves. It is ignorance. Let us have no more *private* diseases. By making them public they will at least cease to be private. Educate, educate.

Loss of vitality, in any manner whatever, corrupts the blood necessarily, because it is the vitality through the nerves that circulates and cleanses the blood. Beware, young man, how you expend your vitality without using it for some high and holy purpose. The strength of four-score years and more is best secured and subserved by using the vital force during the full period of life for worthy ends alone.

The most and greatest pleasure will be best secured by temperance in all things. Continence and chastity are virtues in every relation of life. *Self-control* is the magic wand that brings to man health, strength, eminence and happiness.

Social purity is freedom from admixture with anything corrupting or debasing; and it is not necessary for a man to go outside of himself to corrupt his body and his entire na-

ture. For the best success in life the soul, loyal to truth and devoted to justice and right, must possess and have in perfect control every organ and part of the body.

Venereal disease first shows itself on the organs of generation, either as a small canker-sore, usually called a "chancre," or by the discharge of a whitish, pus-like fluid from the mucous membrane. Perfect cleanliness by the proper use of soap and water immediately after contamination even, will prevent any further physical trouble, but many persons do not even know what is necessary to keep the body clean. If a woman must be exposed to contamination she should keep for ready use a vaginal, or fountain syringe. If water alone is not sufficient as a wash a little powdered borax or boric acid may be dissolved in the water—an ounce of the latter to a quart of water. The application twice a day to a chancre of tincture of myrrh will quickly cure it, unless of long standing, or in a case of a depraved condition of the entire system which will require the correction of bad habits. Caustics, which are often used as a remedy, do more harm than good. They *deepen* the sore, but do not often effectually cleanse it. The application must be mild enough, *not to cauterize,* and yet detergent enough, and sufficiently general in its application to effectually cleanse the part and prevent further infection. Tincture of myrrh is sufficiently cleansing for most cases. Apply the pure tincture twice per day till the part heals. For any discharge from the mucous membrane either of the urethra or vagina, antiseptic soap and water form the best remedy. With these take a hot sitz bath and thoroughly cleanse the parts daily. A small urethral syringe may be useful for the male. Water at 120° Fah. is antiseptic of itself. The discharge of the mucous surface from Venereal infection is *properly* called "urethritis" in the male, and

"vaginitis" in the female. If other remedies are required, look to the improvement of the general health.

Cleanliness, wholesome food and temperance in all things are sufficient to prevent all so-called private disease; and the simple means already mentioned are generally sufficient for cure in all persons not already contaminated or injured by drugs and unnecessary operations.

Orchitis (swelling and inflammation of the testicle) is more frequently caused, as we have reason to believe and do believe, by caustic and irritating injections than by the venereal poison itself.

Bubo (inflammation and swelling of a lymphatic gland in the groin) may be the result of venereal poison if the blood is corrupt. It requires a more simple and wholesome manner of living, hot water dressings if painful, and opening if much pus forms.

Stricture of the urethra is another trouble liable to arise from the injection of caustic preparations.

Fever.

A fever is nature's resort under difficulties for eliminating or removing waste matter and other noxious substances from the system. It is characterized by a sense of heat, often alternating with chills, especially at its commencement; pain more or less of the back and limbs; accelerated pulse; languor; loss of appetite and thirst. The increased heat is the natural concomitant or indication of the consumption of hydro-carbons in the system. These products are not formed by the direct union of hydrogen and carbon, but arise from the decomposition of organic substances, and hence are appropriately styled *waste matter*.

In a state of health this waste matter which is the con-

stant result of all muscular or nervous action is readily eliminated by the lungs, skin, bowels and kidneys, which are called the eliminating organs. If these organs are overtaxed by excessive and protracted muscular or nervous action, then the waste matter accumulates in the system and its consumption and removal by fever is nature's ready expedient. The fever cuts off the demand for food, which, if taken, would still further load the blood, and demands rest of brain and muscle, which she indicates by languor, in order that the hydro-carbons and other waste matter may not be further increased until the existing burden is removed and the eliminating organs have time for rest and repair. Chills indicate that the circulation of the nervous power is interrupted; and pain indicates obstructions in the circulation of the blood. The accelerated pulse indicates the degree of danger to the vital force; and thirst the requirements of fluids to wash away obstructions. Such is fever. Now it will take different forms according to the conditions that gave rise to it. If the lungs are the principal sufferers from being long deprived of a sufficient quantity of pure air then pneumonia or lung fever will be its form; if the nerves have become prostrated by excessive or protracted mental action we get typhus, or brain fever; and when, accompanying it, the vital forces are low, typhoid; and finally, when the vital forces are so low as to allow of a partially putrescent condition of the waste matter in the blood, on which animalcules feed, then the fever is eruptive, as in measles, scarlatina and small-pox; and it will be more or less malignant, as in yellow fever and cholera, according to the depression of the vital force and the degree of putrescency of the blood.

Bilious Fever and Biliousness.—The latter term implies some hepatic (liver) disorder or liver complaint. Either the bile is not properly secreted by the liver, or it is

retained in the gall-cyst (bladder), or liver by some obstruction of the biliary duct or ducts. The circulation soon becomes loaded with bile, the skin is sallow, the white of the eye more or less yellow, the mind is dull and languid, and a general feeling of discomfort prevails. When the white of the eye and skin are yellow the condition is termed "Jaundice." Sick-headache is one of the probable symptoms of biliousness. Authors speak of several poisons—products of decomposition or fermentation of food and waste in the stomach and bowels—that enter the general circulation and give rise to varying symptoms. Some of these—skatol and indol—are products of putrefaction that takes place in the colon (large bowel); and others of fermentation, as lactic and butyric acids. Now think of this condition of your home tenements. A smoking coal pit in the cellar, and a cesspool in the kitchen. The stomach and bowels must be cleaned out and kept clean. The fountain syringe or an antiseptic laxative—ten grains of Hyposulphite of soda dissolved in a glass of water—may be useful to cleanse the bowel, and an emetic to cleanse the stomach. In *many cases all that is necessary* is to regulate the diet and exercise; and the diet must be suited *to* the exercise, or the exercise to the diet. It is better in all cases of biliousness to avoid pastry, fat and all kinds of greasy food, sugar and sweetmeats. It is well, also, to avoid salted provisions, peas and beans. Salted provisions are difficult of digestion, and peas and beans are decidedly of a flatulent nature, i. e., tending to fermentation. In this complaint the diet should be spare and laxative. For this reason fresh rye meal is more suitable than Indian corn meal. The rye mush, taken with a little sweet cream, or sale molasses (treacle) for breakfast without other food is almost a specific for constipation, provided the other meals are reasonable. Drink freely of

water, lemonade or buttermilk. Take a cup of warm water on rising in the morning. May have good raised bread of wheat or rye, thin soups (free from fat), *fresh* meats, *cooked* apples or pears—if very nice they may sometimes be taken raw, especially for breakfast—a raw egg occasionally, or raw oysters, the juice of an orange, nice grapes, bananas, *thoroughly ripe,* boiled onions, lettuce, parsnips, squash and nice potatoes. All food taken must be speedily utilized in the system by suitable exercise to avoid any clogging, putrefaction or fermentation. Thorough massage or kneading of the stomach and liver daily will promote the cure.

If any article of diet is believed or known to disagree, omit it till you find other solution of the difficulty. Coffee is believed by many physicians to be among the agents that *cause biliousness.* Take little or none. In *bilious* fever a good cathartic (Epsom salt) sufficient to clear the entire intestinal canal is generally considered by the profession to be good practice.

For a bad case of jaundice, or liver complaint, and where nothing else will do, Aqua Regia (nitro-muriatic acid) is a very efficient remedy. Of the *dilute* Aqua Regia the dose is five to ten minims or drops in a goblet of water. Of the *un*diluted acid the dose is one or two drops *in a goblet of water* twice a day. One or two doses is generally sufficient. It is given through a straw or glass tube to prevent injury to the teeth. In all *ordinary* cases of bilious difficulties the *juice of the lemon* and proper diet is quite sufficient for cure if judicious exercise be taken.

In *bilious fevers* feed sparingly; thin oatmeal gruel and lemonade or lemonade alone are generally sufficient till the fever somewhat abates.

Active cathartic treatment for bilious patients is consid-

ered proper by many authors, but it is unnecessary *with proper regimen.* Thousands of cases have demonstrated the fact that *all thin, spare patients are injured by the use of active cathartics,* while fat and corpulent patients often think themselves much benefited by a thorough course of cathartic treatment continued for two or three days. Consumptive patients are *invariably injured* by powerful cathartics. These are *general rules* for the guide of the practitioner. Let them be fixed in memory. *Give active and saline cathartics, if ever, only to fat and plethoric persons.*

For thorough and active *cathartic* treatment in perverse cases of liver complaint attended with constipation, Epsom Salts and Tincture of Aloes may be used—one ounce of the former and one fluid ounce of the latter daily for three days. Give the salts dissolved in water or hard cider during the forenoon, and the aloes in the evening, commencing with the aloes before taking the salts. Tincture of aloes grows mild, or less acrid, by months and years of age, but loses none of its cathartic property.

Cathartic and all drug treatment is in general unnecessary.

The following is a safe and sure cure for all *bilious attacks.* Take three times a day the juice of a lemon in as much water as will make it palatable without sugar and avoid all pastry, all greasy food and all sweetened foods till well.

Typhus and Typhoid Fever.

As names of disease indicate symptoms only and not the disease itself, and as symptoms are constantly varying like the clouds in the sky, never exactly twice alike, not even in the same person, we shall in this article consider as practically one what is usually described as two distinct forms of disease, viz., Typhus and Typhoid fever.

Typhus takes its name from a Greek word signifying "stupor," and Typhoid signifies "resembling, or like Typhus," therefore so far as the origin of the terms is concerned a Typhus fever is one attended with stupor, and Typhoid with something *resembling* stupor. The word carotid (stupor) has precisely the same meaning as Typhus, and is the name applied to the great artery in either side of the neck which carries blood to the head; hence a Typhus fever is a carotid fever, and the name conveys the idea that the brain is oppressed by impure blood which is carried to the brain by the carotid arteries; and Typhoid indicates, not a difference, but a *similarity* to Typhus.

Now what is the distinction made by the schools? The principal *diagnostic* (distinguishing) sign of Typhoid fever is what is called *intestinal lesion* (injury). This lesion, according to the books, consists of the infiltration, inflammation, ulceration or perforation of the small intestine in the region of Peyer's glands, or "Peyer's Patches" (for description see Dutton's Anatomy, p. 376), and sometimes, *not always,* gives rise to hemorrhage of the bowel. Another possible distinction which is *claimed by some authors* pertains to the origin of the disease; Typhoid fever being traced to a specific poison, the Typhoid bacillus, and Typhus to an infecting germ not yet isolated. The author regards all germs as *concomitants* only of disease—*and not the primal cause.*

Once again they claim to distinguish these so-called diseases by the eruption, it being, according to some authors, more of the nature of measles upon the body of the Typhus patient, and of rose-colored spots more like the flush of scarlatina in Typhoid fever. The eruption (which is often absent) appears, if at all, usually the seventh to the ninth day upon the abdomen, chest or back.

Dunglison suggests that the abdominal affection (intestinal lesion) is a *complication* existing in certain cases only. Whether Dunglison is right or wrong, the abdominal affection—except in case of hemorrhage which rarely occurs—cannot be determined with accuracy during life (though diarrhea is by some taken as evidence) except by laparotomy (opening of the abdomen), or by spiritual insight. The latter method might be regarded as unscientific, and the former might reasonably be rejected as *unsafe*. Palpation, it is true, might lead to the discovery of soreness in the abdomen, but not to the exact nature of the lesion or cause of the soreness.

Now reasoning along the line of fermentation and the germ theory, and admitting that the typhoid bacillus is found in the dejections from the bowel, we may reasonably conclude that typhoid fever originates in internal filth, poison or waste, accompanied by an impaired condition of the vital force and circulation. There are "signs of incipient putrescency."

The inhalation of sewer gas and the foul odors from neglected privies and cesspools tend to corrupt the blood and excite zymotic (caused by fermentation) disease.

Typhoid fever is a form of *zymotic* disease; and the indications are to *arrest fermentation;* to cleanse the system of waste or poisonous matter by slushing it with pure air and water; to keep the emunctories, or eliminating organs active; and to invigorate—not weaken—the vital force.

The best way to reduce fever is not by giving antipyretics (heat destroyers) as generally understood, which consist of poisonous coal tar products, or other agents that benumb and destroy the nerve centers, and thus only *hide the manifestation* of danger without removing its cause, but to fan the

flame of life with vital air and thus oxidize the waste matter and remove as much as possible of it through the lungs by respiration of pure air; to slush the colon or lower bowel with water (cold or hot as is most agreeable to the patient—generally cold if the *hands and feet* are comfortably warm) and remove all offending matter as fast as it accumulates in that emunctory; to open the pores of the skin by proper baths, and promote its action if need be by mild diaphoretics; to slush the stomach and blood with large draughts of pure water or water acidulated with lemon juice to keep the blood fluid; and to give mild and safe antiseptics as cleansing agents.

It is not safe to weaken the bowels with active cathartics in *eruptive* fevers, nor the vital force with powerfully depressing drugs like antipyrine. If any drugs whatever are needed the following are the mildest and the most efficient, viz., *camphor water* and boracic (boric) acid, and if necessary to promote action of the bowels at the *commencement* of the attack ten grains of hyposulphite of soda in a glass of water.

Keep the hands and feet of the patient *always warm*, and the room at the same time comfortably cool—60 to 70° Fah. (15 to 21° Centigrade). The room must be constantly well ventilated. Remember that the gas from the lungs (the same that oppresses the brain and produces stupor) is heavier than atmospheric air and will not go out at the upper part of the room. Raise the bottom sash if necessary to ventilate the room, and do not be afraid of outer air so long as the hands and feet of the patient are comfortably warm and the mercury stands above 60° Fah. or 15° C.

Give light food only three or four times per day during the entire sickness.

Oatmeal gruel well cooked and strained may be preferable

at first. *During convalescence* it is safer to confine the patient to vegetarian food. On animal food, which is more likely to ferment, a relapse is more likely to occur. Intelligent nursing is the main reliance.

Alcoholic liquors in Typhoid fever are recommended by some authors. Alcohol is an antiseptic, and a little pure spirit in absence of any *other* antiseptic might be useful, but alcohol will be rarely if ever needed in connection with No. 7 (camphor water and boric acid). In a purely *nervous* fever—not zymotic—alcohol will be found to aggravate the symptoms, almost invariably.

Brand's method of reducing fever is by use of cold baths often administered (every three hours) until the temperature of the patient, as determined by an accurate clinical thermometer placed under the tongue, goes down below 102° Fah. (39° C).

The water of the bath is made at first about 85° Fah. and may be afterwards reduced to 80°, and the patient remain in it till the temperature of the patient falls to 101° Fah. by a correct thermometer. If the patient is chilly after the bath hot bottles are applied to the feet, and a little whisky or rum punch is given. The results are said to be very satisfactory; but one author says that the cold bath is not altogether free from danger. The blood must not be chilled. Sponging, wiping and rubbing with the dry hand is always safe if properly done in a room comfortably warm.

Remarks.—Typhoid fever is sometimes called Enteric fever, also *abdominal typhus*. No specific remedy is generally known to the profession, and one late author insists that Typhoid fever is not curable in any degree. Its duration is usually two to four weeks, but treated with baths and mild antiseptics a few days finds the patient convalescent. For the first five days, *under the old treatment,* the fever in-

creases about one degree (Fah.) each day until the fifth evening when it reaches 104° or more, the *morning* temperature being a degree or more lower. It continues thus for 8 or 9 days.

Some German physicians, it is said, still give calomel and Tincture of Iodine in Typhoid fever. We do *not* recommend them. Camphor water and boric acid (five grains of the acid to each ounce of camphor water) given in dessertspoonful doses every two hours during the height of the fever forms a much safer and better remedy. A pint of camphor water contains only five grains of camphor.

Typhoid fever is a *zymotic* disease and what we have to combat is internal fermentation, stagnation of the blood and accumulations of waste and poisonous matter. During convalescence, which is sometimes protracted to weeks, a rational diet, adapted to the strength and condition of the weakened organs, may prevent a relapse.

Pneumonia (inflammation of the lung or lungs).

In order to understand the nature of disease, it is necessary to know something of the structure and use of the organ or part affected. The lungs are the principal organs of respiration. They are situated in the chest, around the heart, and communicate with the atmosphere through the respiratory passages. (For a full description of the respiratory organs see "Dutton's Illustrated Anatomy.") Now, the office of the lungs is to air the blood, and so important is this office that if it is suspended for the space of three minutes the person ordinarily becomes unconscious, and unless resuscitated, dies. The blood is aired by means of respiration or breathing, and usually the adult breathes eighteen times per minute, but in pneumonia the number of respirations is always increased to twenty-five, thirty or even

more, and this one symptom—*hurried respiration*—in absence of any unusual or violent physical exertion, is much more simple and certain as a diagnostic sign of pneumonia in its first stage than the usual crepitant rale (rattle) discovered by auscultation (act of listening through the chest wall), on which physicians usually depend.

The crepitant rale can only be heard during the stage of congestion, and whenever the lung tissue becomes solidified the air no longer enters that part of the lung, and the usual sign (crepitation) of the first stage of pneumonia is entirely absent; but the hurried respiration is present during all stages of the complaint, and is much more reliable as a diagnostic sign. The pulse also is generally increased in frequency, but not in proportion to the rate of respiration, especially in adults.

By airing the blood we convey to it oxygen, which is the pabulum of life, and remove from it carbon which chokes the circulation and impedes all the vital processes. Let us remember, also, that the circulation of the blood, on which all vital processes of the physical organism depend, is governed by branches of the sympathetic (vaso-motor) nerves, and that all depressing emotions and exhaustion of nervous energy correspondingly depress the circulation of the blood. We are now prepared to understand the CAUSE OF PNEUMONIA. A chill following or attending nervous depletion, bad air that fails to oxidize and decarbonize the blood, or great mental depression that interferes seriously with breathing—whatever interferes with the vital process of airing the blood is an efficient cause.

A chill clogs the circulation by interfering with the process of osmosis (the passing of fluids through animal membranes). Cold contracts all known substances except water in the act of congealing, and the contraction of the lung

tissue, by cold or chills, impedes the passage of the gases (oxygen and carbon dioxide) through the membrane that separates the blood from the air in the lungs. A chill with nervous exhaustion is always a sufficient cause of pneumonia, but any impurity of blood, from gross living, will add to the severity of the attack.

SYMPTOMS. The substance of the lung itself (the parenchyma of the lung) has little, if any, ordinary sensation, and consequently little or no pain is felt in simple pneumonia, but when the pleura (the serous membrane that covers the lung and lines the chest) is involved in the inflammation (giving rise to pleurisy, or pleuro-pneumonia) there will be sharp pain in the side. There will always be more or less chill and fever, depending upon the extent of the inflammation. The hurried and difficult breathing, and the absence of the normal respiratory murmur, which may always be heard (by auscultation) during vigorous respiration in a healthy lung, with cough and expectoration, are the principal symptoms, or signs of pneumonia.

Pneumonia is commonly divided, by the schools, into three stages, and these are distinguished as the stage of congestion, or engorgement; the stage of consolidation, or red hepatization; and the stage of grey hepatization.

In the first stage the overcrowded and distended capillaries that surround the air cells choke up, more or less, the capacity of the lung for air, and some of the air-sacs may be entirely collapsed. If not collapsed, the air cells may be partially filled with matter exuded from the venous blood.

In the second stage the lung becomes thoroughly solidified or hepatized—more like the tissue of the liver; is of darker color than the healthy lung; of greater specific gravity; and airless to the extent of its consolidation. At this

stage (the second) crepitation, which is considered diagnostic of the first stage, is entirely absent. Inflation of the lung, or lobe affected, does not take place. The alveoli of the lungs and air cells are now filled with a fibrinous exudation from the blood, mingled with pus-cells, blood globules and fatty matter. The stage of consolidation (second) may last one or more days. It gradually passes into the stage of grey hepatization (third).

In the third stage the air cells are filled with a semi-fluid mass which may be expectorated, or possibly absorbed, if the lung returns to its normal condition. The matter expectorated is usually, at this stage, more or less purulent. The duration of each stage depends much upon the condition of the blood and organism at the time of the attack.

The second stage may be reached in the short space of six hours, or delayed for one or two days, and may continue from three to six days, and the third stage may last from three days to a week or more, so that the disease runs its course ordinarily in seven to fifteen days.

In old age with feeble oxidizing power (or heating power), and the blood heavily laden with an excess of fibrin and waste matter, an abscess of the lung may occur within two or three days from the stage of congestion. Whatever tends to depress the vital powers or load the blood with an excess of fibrin and waste material to be excreted may be looked upon as a predisposing cause of pneumonia, and the exciting cause is, without doubt, a failure to oxidize and decarbonize the blood by means of deep and efficient respiration.

In polar regions, where the air is more condensed and the oxygen more efficient, it is said that this form of disease is unknown. In this country it prevails more in the early spring, while the system is suffering from the hibernating

habits of the people during winter. Increase of density of population, under existing conditions, increases, also, the liability to attacks.

A chill, dyspnœa, pain, cough and sputum are all common, but not constant, symptoms of pneumonia. In perhaps four-fifths of cases the disease is ushered in by a distinct chill which lasts ordinarily from one to three hours. The pain, if any, which usually follows the chill is pleuritic, and rarely continues beyond the third day. If it does so continue the disease is known as Pleuro-pneumonia. The pain is sharp and increased by coughing.

In old age pain and dyspnœa are usually less severe, and on this account some deny that the lung is inflamed. In younger persons the dyspnœa is often so great that the patient cannot lie down. Cough, within twenty-four hours, is generally present. At first it is short and hacking; is more constant in children. The sputum (matter expectorated), when present forms a prominent symptom. For the first day or two it is frothy mucus. About the second day it is viscid and tenacious. In color it may be like brick-dust (rusty), creamy and yellow or dark—like prune-juice. The latter shows a depraved state of the blood.

The sputum is often loaded with salt (chloride of sodium) and leads to the suspicion that an excess of salt may be a predisposing cause. In the majority of cases the crisis is passed before the ninth day. If the fever continues longer it indicates purulent infiltration, or breaking down of lung-tissue. The pulse ranges from 90 to 140. If it continues above 120 in the adult the case is severe. In children the pulse rate may be 160, or even more, possibly 180. In old age it may be as low as 75.

Convulsions are common in children, rare in adults. In children, also, the crepitant rale, which is regarded as diag-

nostic of the first, or congestive stage, is usually absent; and it is also rare in pneumonia developed with acute articular rheumatism.

When the lung is consolidated (second stage) the crepitant rale ceases, lung movement is lost or diminished, there is complete dullness on percussion, and bronchial respiration is heard over the affected lung. These symptoms, however, will all become more or less modified or subdued by a more familiar acquaintance of patients with the benevolent processes of nature.

Treatment and Observations.

The proper remedies for inflammation of the lungs are measures that will assist the vital energy to accomplish its object, viz., to aerate (oxidize and decarbonize) the blood and restore the circulation to its normal condition. The venous blood, which crowds the right side of the heart and chokes up the air cells of the lungs by distending the blood vessels, goes through the pulmonary artery to the lungs for a specific purpose, and until that purpose is accomplished it cannot pass readily from the lungs through the pulmonary veins to the left side of the heart into the arteries. It is *not arterial blood* until it is properly aired in the lungs. Hence deep breathing of good air only moderately warm is an essential and potent remedy. Advise the patient, in commencing the lung exercise, to use moderation, but persevere. Artificial warmth may be provided, if necessary to promote the circulation of the blood, by means of bottles or bags of hot water placed about the person. If the blood is thick and stagnant with an excess of fibrin, as in most cases of inflammation, a bowl of hot lemonade, only slightly sweetened, if at all, drank *ab libitum*, will tend to preserve the fluidity of the blood till the excess of fibrin may be used up naturally

for the repair of worn and wasted tissues. No fibrinous or albuminous food will be required while any excess of fibrin remains in the blood. No waste matter in the colon, or large bowel, should be allowed to remain and poison the system. The colon may be cleansed with clysters of warm water by use of the fountain syringe.

Sweating may be promoted, if necessary to eliminate waste more freely by the skin, by the use of hot drinks or teas, especially a hot infusion of sage. The sage may be taken *ad libitum*.

Bleeding was once considered an important remedy in this complaint, and is still recommended by a few old-school physicians. The abstraction of blood may, it is true, take off the distension of the blood vessels, but the blood is essential to life, and a spare diet with diaphoresis is always a much safer and better way of reducing the blood, when necessary.

Bleeding, calomel, squills, antimony, veratrum viride, aconite, gelsemium, digitalis and opium or morphine have long played a conspicuous part in the treatment of pneumonia. Forty years ago the first four on this list were the principal remedies in this disease of the so-called regular practice; at the present time the second four are in more or less favor, together with morphine to moderate the cough; but none of these drugs will be needed or used in pneumonia when the art of healing becomes a science. Disease will then be removed by removing its cause, and right conditions will constitute the proper remedies.

One modern author recommends strychnine (a most deadly poison), as a stimulant to the respiratory center in connection with digitalis (another poison) in this complaint. The same author tells us that "The primary stage of

pneumonia consists in an *increase in the calibre* of a number of the blood vessels of the lung, so that congestion occurs, and as a result the blood stagnates and an exudation finally ensues." Now mark the language. "An increase in the calibre" of certain blood vessels is—according to this author—the first error; and from this increase of capacity of the pulmonary vessels proceed all the dire effects of pneumonia. Now, if this was true, it would be no explanation of the difficulty, for nobody knows why these vessels become all at once "increased in calibre." But it is not true. The primary stage of pneumonia is not a simple relaxation of the pulmonary arteries, but a failure to oxidize and decarbonize the overcrowded venous blood. Congestion occurs, not because of increase of size of the pulmonic vessels, for that would not be congestion, nor cause congestion, but because the venous blood cannot properly leave the lungs until it is arterialized by coming into communication with atmospheric air. Congestion implies a crowding of blood into the vessels of the part, and not simply a filling of vessels increased in calibre, as this author says. It is the crowding of the venous blood into the lungs, to get air, that *distends the vessels,* and not the enlargement of the vessels, that invites the blood. And again, to say that the increase of size of branches of the pulmonary artery is the cause of disease is to impute blame to the Great Architect of the body, instead of placing it upon the folly or neglect of human beings who fail to attend to the proper conditions of physiological action. We do not need to counteract the natural living force that sets the machinery in motion, but to assist it.

The great danger in the treatment of disease is oftentimes not so much from the disease itself, which is specially admonitory of some neglect or error on our part, but from the drug or drugs administered with misplaced hope of cure.

We need only to regulate conditions as to air, breathing, warmth, light, diet, skin, bowels, cleanliness and mind of the patient to cure pneumonia.

In Pleuro-Pneumonia, camphor-water and boric acid may be used. The latter form of complaint is considered by some authors a zymotic disease. A spoonful of camphor-water and five grains of boric acid may be given as an antiseptic several times a day. A light room, moderate temperature of the room (about 65° Fah.), with warm applications, if necessary, to the patient; light bed-clothing, sufficient only for the warmth and comfort of the patient; and simple nourishment, when any at all is needed, will greatly promote a cure; but deep voluntary breathing is the key to the whole situation, and if properly done *at the onset* will effect a cure, at once, or in a few hours.

Diphtheria.

Diphtheria is a name given by M. Bretonneau to a form of disease characterized by the formation of a false membrane, usually on the tonsils, soft palate, or throat, and sometimes on other parts of the mucous surfaces. It takes its name from a Greek word that signifies "skin or membrane."

The abnormal membrane is the distinguishing symptom or *diagnostic* sign of the disease. This membrane is an exudation of plastic material, probably fibrin, which is at the time, excessive in the blood, and which forms a thick tough pellicle over the mucous surface, at first greyish-white, but in bad cases, after two or three days, brown or even black. When present the false membrane may be seen by depressing the tongue and looking into the throat (or pharnyx). Some of the other *prominent symptoms* are a *low*, instead of high temperature (97° Fah., or even 96°), *diminished* rate of pul-

sation, but in some cases increased, and choking up of the nasal and respiratory pasages that tends to obstruct the breathing. In bad cases a perceptible fetor arises from the throat of the sufferer. In some cases there is also profuse expectoration of phlegm as if nature was endeavoring to expel the poison through the salivary glands. The false membrane is a *fungous* growth and unless well cleansed by some proper antiseptic it is sooner or later infested with minute organisms or bacilli, which many professional persons consider to be the *cause of the disease.* Now fungi are flowerless plants that grow only in damp, dark places where conditions are not favorable to the growth of more highly organized beings.

Fungi are distinguished from healthy specimens of other plants by the absence of chlorophyll, which is the substance that gives the beautiful green color to leaves and grass. Now we know that plants deprived of light do not have the green color of the chlorophyll, and from this we infer that an abundance of sunlight is prophylactic. We also know that fungi, such as toadstools, mildew, etc., will not grow—except in *damp places deprived of warmth and sunlight,* and we may safely say that diphtheria will not affect the throats or mucous surfaces of those who keep the blood pure and vigorous by proper food, open air, or good ventilation, *sunlight and* joyous activity. An abundance of oxygen in the blood, which is obtained by deep and full breathing, will also prevent the growth of fungous membranes. Immediately preceding rain the atmosphere becomes lighter than usual, as shown by the barometer; and consequently the same amount of air at such times contains less oxygen, which is known to be the pabulum of life; and Holland says: "We may be sure of rain when we see a fungous substance or soot, gathered about lamps and candle snuffs." That is to say,

when the air is well charged with oxygen the soot or fungus, will not gather. So of the blood.

An abundance of sunlight, good air and proper use of the lungs are therefore nature's prophylactics (preventives) against Diphtheria. Bad Hygiene increases the virulence of any disease. The greatest mortality from Diphtheria occurs in children between the years of two and five, a period when children are most neglected.

We know further that corn and other cereals will not grow in damp, cold, shaded soil where fungi thrive, and to simply destroy the fungi, or the micro-organisms that infest them will not make corn grow in such soil unless conditions are changed as to humidity or dryness, warmth and sunlight. Minute organisms do not infest a clean, healthy body, but are always ready to prey upon organic matter already putrid or fast going to decay. Bacilli are utterly powerless to cause disease unless they find habitats favorable to their growth. No doubt diphtheria has its origin in an excess of organizable matter that has been taken as food, and remains to decompose in the system and become putrefactive, thus giving rise to poisonous products. It is not the bacilli that cause disease, but disease that makes such life possible.

Treatment.—As to curing diphtheria with anti-toxin it is preposterous. We do not "gather grapes of thorns or figs of thistles." Anti-toxin, if it is what it is represented to be, is diphtheritic poison, and it is illogical to expect to remove diphtheritic poison by adding more of the same kind. The name itself is misleading. It is not *anti*-toxin, but a toxin (poison). It is taken from a horse said to be immunized, but there is no *immunity* from poison. *Tolerance* for a season is possible, but there is no immunity (freedom or exemption). Poisons always tend to kill and the natural effect must sooner or later follow their use. For the cure of diph-

theria we must depend upon our ability to cleanse the body of waste and noxious matter by the *mildest* measures possible (for diphtheria is a disease of depression), and make all conditions as to food, air, cleanliness, temperature and sunlight most favorable. An *equable temperature* of the room (about 65° Fah.), is important. The patient is always very sensitive as to temperature. No chill must be allowed. If possible have the patient in a room warmed from a fire in an open fire-place. The open fire ventilates the room without strong currents of cold air. Sunlight is a valuable auxiliary to the cure, as it is also one of the best preventives. *The juice of the lemon* freely taken as a drink in water is generally gratefully received by the patient and should not be forgotten. The lemon helps by holding the fibrin in solution and preventing the exudation of coagulable lymph. Only the juice of the lemon must be used.

Diphtheria is a zymotic disease somewhat resembling scarlet fever, and antiseptic remedies are therefore useful and often necessary, to arrest fermentation and check the tendency to putrefaction. Of these the best are the following, viz.: Camphor water and boric acid; permanganate of potash; the vapor of limewater and vinegar; washed sulphur; and good cider vinegar. Local and constitutional treatment are both recommended. The throat can be sprayed with an atomizer, using a solution of boric acid and camphor water—ten grains of the acid to each ounce of camphor water; or we may use *clear* for the same purpose either the tincture of peppermint, or tincture of myrrh. If the camphor water is not at hand it can be quickly made by putting a teaspoonful of spirits of camphor into a goblet of water and mixing. Strain out any camphor gum that may be precipitated by mixing. A pint of water will take up and hold in solution only about three grains of camphor gum.

The sulphur may be blown into the throat through a goose-quill or a paper tube. Two or three grains at a time are sufficient. The permanganate of potash may be dissolved in water and used with the atomizer, or used as a gargle. Five to ten grains of the permanganate is sufficient for a pint of water. These local applications should be made every four hours or oftener till the patient is relieved. Swabbing the throat is *not advised.*

Besides the local applications the patient may take every *four hours* a teaspoonful of one of either of the following, viz.:

Mix one quart each, of West India molasses (treacle) and good *cider* vinegar, bring to a boiling point and skim, then add one ounce each of tincture of myrrh, tincture of peppermint, and spirits of camphor, or in these proportions. Keep tightly corked to prevent the escape of the camphor. Dose one teaspoonful.

Tinctures of Cayenne, myrrh, and peppermint, of each one ounce, one-half ounce spirits of camphor, and of simple syrup and *cider* vinegar, of each one pint. Mix. Dose one teaspoonful. Divided dose for a child. One of the above may alternate with the local application.

Do *not* attempt a forcible removal of the membrane. If torn off the mucous surface is left sore and raw, and another membrane is sure to form. In cases of diphtheria of the larynx with *difficult respiration,* it may be well to give a mild emetic—ipecac or lobelia. A teaspoonful of wine of ipecac, or tincture of lobelia in a goblet of warm water, repeated if necessary every ten minutes, will soon induce vomiting. The remedies must be used perseveringly till the membrane is softened and comes away; usually two or three days. The diet may consist of strained oatmeal gruel, or toast water and milk.

Temporary paralysis is frequently one of the results of this disease. Paralysis, when present, frequently comes on two or more weeks following the attack. It usually begins in the soft palate (velum palati) and extends to the upper and lower extremities. The paralysis of these parts is usually first discovered by the regurgitation of liquids through the nose while swallowing, and by difficulty of articulation; and later the limbs are not so obedient as usual to the will. In some cases the paralysis extends to the heart and respiratory muscles and thus proves fatal. The judicious use of *friction and manipulating* of the limbs helps to restore the action and use of the paralyzed muscles. Cases of diphtheria of the bowels have occurred when both patient and physician alike, ignorant of the nature of this disease, have declared that the patient passed from the bowels nearly the entire mucous membrane of the intestinal canal; and could not be persuaded to the contrary, so nearly does the false membrane simulate the mucous coating of the bowels. It is well to keep the bowels cleansed with the fountain syringe, using hot water with a few grains of permanganate of potash, just enough to change the water to a beautiful purple color.

Violent delirium is a possible symptom in advanced stages of the disease, owing to the septic and stagnant condition of the blood in the brain.

With judicious treatment a great percentage of all cases recover, but remember always that prevention is better than cure. Other and more dangerous antiseptics and drugs need never be used. Paralysis and heart failure may be the result of dangerous medication.

Cephalalgia (headache).

Pain in the head is, usually, if not always, attended by either inflammation or congestion of the part affected; it

may be within or without the cranium, but is most painful or severe when within, on account of the confined space of the blood vessels within the cranium and the great derangement of mental action that ensues from any undue or abnormal pressure upon the brain. On this account we should regard a severe headache as positive evidence of wide departure in some direction from the path of wisdom which leads to health and physical perfection. All pain is a danger signal, and its only purpose is to lead us back to health and happiness. It tells us, "We are on the wrong track." We must seek and remove its cause, not stifle its warning with poisonous drugs. Any part of the body that is used more than other parts requires more blood than other parts, and in consequence the blood vessels of the part most frequently and severely exercised become more or less dilated and weakened on account of the excessive flow of blood to the part.

In this weakened condition of the walls of the blood vessels any great excitement of the part or organ produces at once congestion of that part, and if the blood is loaded with fibrin or albuminous matter from excess of food, especially that usually called nitrogenous food, or with carbon on account of deficient aeration (airing) of the blood, or from bile or other waste matter that makes the blood thick and stagnant we get inflammation and also pain, unless the inflammation occurs in some part—like the substance of the lungs—that is destitute of sensory nerves.

A sour stomach, or fermentation in any part of the digestive tract, or colon, which loads the blood with acrid and poisonous matters, such as indol, skatol, uric acid, etc., is also an efficient material cause of pain in the head or any other part supplied with impure blood.

The sensible remedy for headache is to correct conditions and not resort to drugging. First we must understand

whether the cause is purely mental, or is dependent on some wrong physical condition. Oftentimes it is the result of violent emotion, protracted anxiety, or distress of mind. The remedy in such cases is to be more philosophic and reasonable as to the *use* of the brain. Oftentimes again it is the result of constipation, or sour stomach; and it is sometimes caused by some severe strain of body, or violent physical exercise, especially in persons addicted to protracted mental efforts. In any case the true remedy is to correct the life. Magnetic treatment, massage, or a hot foot bath will often give temporary relief. A sour stomach must be cleansed; and constipation, if present, relieved by proper methods. See article on tea and coffee.

Science of Reproduction (tokology or obstetrics).

Whatever may be said or thought as to the *primal* origin of all being; whether we are or are not all the offspring of one supremely benevolent mind, it will no doubt be generally admitted, if each is allowed to answer for *himself* and not for another, that as human beings we love the True, the Beautiful and the Good. Truth and goodness are moral qualities; beauty, is largely a physical quality, but is adorned or intensified, no doubt, by the nobler attributes of the soul or inner life. Now Beauty is the offspring of Health, and Health comes not by chance, it is the result of glad obedience to natural law and the enjoyment of that freedom that is found only in serving with body and mind the greatest good of all mankind. Beauty is a trinity of three perfections, viz.: symmetry, color, and function. Symmetry is a mathematical perfection, and is only another name for perfect form; perfect color is the perfection of art, but is found only in nature; and perfect function is the result only of perfect health.

There *is* a science of perfect health, but it is not yet fully developed. Not observation alone, but logic and philosophy will help us to unfold it. The word health is an abstract noun derived from the verb, heal. The verb gives us the idea of a process of restoration. To what, then, are we restored when healed? Ans. To a perfect state of body and mind; the best possible condition. Health seems, therefore, to be an ideal state, something for which all are striving with more or less knowledge and earnestness, but something to which few ever attain. The ideal of the human finite mind is not always the perfect ideal, and to have perfect health we must attain to the *perfect* ideal. The perfect is that which gives in all respects complete satisfaction. It brings rest to the mind, happiness and peace. Now physical perfection is the basis of all other perfection of the human finite being. We cannot see clearly without a perfect organ of sight, nor hear without the ear. We must have perfect bodies; and a *perfect* human body is the work of several successive generations. It requires lives in harmony with natural and organic law; in other words we must co-operate with the Infinite or Perfect Mind in all that we do. We must understand science, which is the divine method of proceeding. The science of reproduction is a branch of human knowledge that ought to be universally understood. Only that should be left to another which can be done for us *by* another. Another may make railroads, garments, houses and pictures for us, but cannot make our bodies for us. We may have books and teachers to aid us, but our own work will show for itself in the bodies of our children and children's children. Ignorance and misconception on the subject of medicine in general, and of reproduction in particular, has filled the world with pain, sickness and sorrow. The pains of childbirth, weaknesses peculiar to women, and all disease may, by proper education,

be banished from the earth. Woman must study her own most wonderful organism and become master of herself.

Pains of childbirth are not normal; they are the result of error; of the misconception of truth. No woman who lives healthfully, as true science may determine, for the period of one year before the birth of her child, will suffer much if any pain in her delivery. Muscular contraction in one part of her body is as painless in health as that of any other part, as is made known by the study of Physiology. Voluntary muscular fibre, like that which moves the arm, is entirely painless in health whether in action or in repose, so also is involuntary muscular fibre like that of the stomach or uterus. The pain is the result of error; so is all sickness, and it flies before the approach of truth, as darkness flies at the approach of light.

The era of woman is coming, and the first thing she wants to know is to know herself. Knowledge is her birthright, and more especially, knowledge of the divine function of motherhood. As woman rises by her own effort to higher planes, she will lift up her brother man. All fields of science, art and industry must be open to her that she may find her true sphere of action and realize her own ideal. She may sometimes divide with man the honors of his victories, but she will bring to him more honor than she takes. Freedom everywhere is the law of healthy growth. Woman has been "confined" too long. The term "confinement" is a misnomer, even in the lying-in chamber, when applied to an intelligent and educated woman. She is there of choice, and is there to be *served* by her medical attendant, not confined. Woman has been poisoned with ergot and a hundred other drugs, blistered, bled and leeched, maltreated with instruments of all kinds, including the surgeon's knife, and worst of all condemned to ignorance of the beautiful structure and mysterious functions of her own body.

This condition of ignorance in regard to her own body, sometimes called innocence, has often brought disease both upon herself and her guilty master. Things have not been rightly named, nor the cause of evils understood. To call things "anti-toxine" which are in their nature poisonous (toxic), is to mislead by implication. To call disease tertiary syphilis, which is induced, as we believe, by use of mercury, is to transfer the guilt of ignorant medical advisers to the ruined reputation of the patient. To give drugs which aggravate disease and hurry the patient to her grave under the name of medicines is to confound language and do lasting injury under the guise of a benefactor. The term Obstetrics as now used, is a misnomer. To a scholar it signifies *obstructions* and has nothing to do with the sublime mystery of creation nor the science of reproduction. Syphilis, which is generally treated with mercury, and under the present reign of medical schools will never be eradicated, is undoubtedly a disease arising from filth, and may be swept from the face of the earth by cleanliness and a proper education.

And the same is true of nearly all other forms of disease. We want not drugs as a rule, but knowledge, truth, science, logic, philosophy, in a word, education. We appeal to woman to take up at once the study of herself, of her own organism. It is to save woman from suffering and sorrow, and elevate the race that we thus appeal to her. If woman only knew how many unnecessary surgical operations are now performed upon her body, which more or less disable her for life, like those of opening the abdomen, cutting apart the bones of the pelvis, removing the uterus and ovaries, using obstetric and placental forceps, destroying the unborn child, turning the child *in utero,* dragging the uterus out of the pelvis, scraping its inside, taking stitches in the *os uteri,* and many others, she would no longer leave the destiny of

her physical existence in the hands of an almost irresponsible profession. The laws of our being are simple and easily learned, as are those of any other branch of science, and the reward of intelligence is prosperity, health and happiness.

It is as natural for woman to bear children, at her soul's dictation, as for an apple tree to bear apples; and in a perfectly natural and healthy state—as when Eve was in the garden of Eden—with no pain. Pain comes, if at all—for many women on the earth to-day bear children without pain—in consequence of an erroneous manner of life. The remedy is to learn the natural or divine way of living. Study Medicine.*

That branch of Medicine that treats of Reproduction is properly called Tokology. We know of no good reason for retaining the word obstetrics, unless it be to remind us of the many crude ideas that we still dignify with the name of science. It has no meaning in itself beyond the idea of managing *obstructions;* and obstructions have really little or nothing to do with the science of reproduction. At any rate the term, obstetrics, is entirely inadequate and unscientific. It is from the Latin and signifies to "stand against," although some would have us believe that it signifies to "stand before." In either case it is improper if we desire to use correct language. The science of reproduction is sufficiently interesting to both sexes to awaken proper attention, but it has not been put in language sufficiently plain to enable people to understand it properly. It belongs as a study, not to any class or profession exclusively, but to all. Knowledge, not ignorance, leads to culture, physical perfection, and beauty.

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*(For a proper and plain description of the different parts and organs of the body, both male and female, see the author's "Illustrated Anatomy," which need not be repeated here.)

Childbirth (Parturition), under present conditions, is so commonly attended with pain, that great suffering and danger are considered to be inevitable. Such is not the fact. The reproductive process is physiological, not pathological. "In sorrow shalt thou bring forth children," was not spoken to one who obeyed the laws of her being, but to Eve *after her fall,* and in consequence of it. The pain and sorrow is the result of error only. Painless childbirth is as natural as painless walking. Correct living does away with all pain and all disease.

All *healthy* mothers bear children without pain to-day and always have. But health, according to our conception, is not the work of a day, or a year, nor, in the highest sense, of a lifetime. Two or three generations of correct living are necessary to give the best physical development. Beautiful children are not the product of one beautiful thought, but the product of beautiful lives for two or more generations. Yet much can be done in a few weeks or months, and no one ever suffers much or long except for his own misdeeds.

The so-called diseases of pregnancy are misnomers. There are, properly speaking, no diseases of pregnancy. They are all symptoms only of error; of the misconception of truth. The morning sickness, so-called, is the result, not of pregnancy, as many suppose, but the result of erroneous habits It would not occur if the blood and circulation was pure and free. It is evidence that the blood is loaded with waste matter, and the circulation impeded by excess, or grossness, of food. The Master Builder of the temple for indwelling souls begins His work by clearing away the rubbish that obstructs the laying of a proper foundation. The purest food, taken in gladness and moderation, with abundant healthful exercise of the brain, lungs and muscles, would forever prevent all nausea and vomiting. It is necessary only to clear the

system of all waste and unnecessary material. The remedy for "morning sickness" will be found in an honest appetite for pure food, cheerful activity and abundant deep inhalations to oxidize the blood.

Conception (receiving or bringing together), or impregnation, takes place by contact of the female ovum, or germ, with the sperm, or seminal fluid, of the male. The latter contains spermatozoa (microscopic animals of the semen). Whether the spermatozoon reaches the ovum, in the uterus (as is most likely), or in the oviduct, is not definitely settled. The ovum undoubtedly furnishes the primal material for the *body* of the embryo, which afterwards becomes the body of the child. Unless impregnated before it leaves the uterus the ovum never becomes an embryo, but passes through the oviduct, uterus and vagina, and is lost. It retains its life for six or eight days after it leaves the ovary, and passes from the uterus during the *first half* of the menstrual month. If impregnated before it leaves the uterus it becomes attached to the newly-formed lining membrane of the womb, and, under healthful conditions, develops into a full-grown child. It is usually called an embryo until the period of *quickening* (its movements becoming perceptible to the mother), which occurs near the first of the fifth month of gestation (time of carrying the child in the womb). At the period of quickening the embryo takes the name of fœtus (unborn child).

Conception takes place during the first half of the menstrual month in nearly all cases. It is possible, it is said, for conception to take place the *day before* the usual time for the menstrual flow, but ordinarily *not possible* during the *last half* of the *menstrual* month—a period ordinarily of twenty-eight days (a lunar month). As a *general rule,* the ovum passes off within *six or eight days* from the cessation of the

menstrual flow, unless it is impregnated by the spermatozoon of the male within that time; but the above is more reliable. There is scarcely one case in a hundred where the ovum remains in the uterus two weeks after the cessation of the flow unless impregnated. The cause and nature of the menstrual flow is not well understood. It is now considered a true hemorrhage (flow of blood); although the blood does not, like ordinary blood, coagulate. It is not *fresh* blood. Coagulation is supposed to be prevented by the acid secretion of the vagina; but this is not certain. In menorrhagia (excessive discharge) the blood is fresh and may coagulate. The menstrual fluid is generally considered a secretion from the congested uterus, and is generally accompanied with more or less pain and suffering. The pain, however, is not physiological; it is due to impaired health.

Menstruation, except during months of bearing children and nursing, continues at more or less regular intervals for about thirty years, commencing at about fifteen years of age and ending at forty-five. This is the general rule, to which there are some exceptions. There are instances of menstruation in childhood, and even in infancy. Phœba A. Baker, born at Sing Sing, N. Y., in 1851, commenced menstruating when only *ten months old.* A Hindu mother has *borne a child* at ten years of age. These, however, are exceptions. The commencement of menstruation marks the epoch of puberty (capable of bearing young). This occurs within the tropics between the tenth and fifteenth year; in temperate climates from twelve to sixteen, ordinarily, fifteen is about the average. The quantity of the menstrual discharge at each period is estimated at about two or three ounces during the four or five days of its continuance. The discharge is not absolutely essential to ovulation (the maturing of an ovum). Girls have been known to become pregnant before menstruating at all.

One of the surest *signs of pregnancy* is the *non-appearance* of the regularly expected menstrual flow at any time during the fruitful period of a *healthy* woman's life. Sickness, especially pulmonary consumption, is often *un*attended by the menstrual flow. Consumptives rarely menstruate. In *many cases,* what is called *morning sickness* is one of the earliest signs of pregnancy. This morning sickness often occurs not later than two or three weeks after conception, and may continue for two or three months. A perfectly healthy person whose circulation was free and pure would *not* present this sign.

Increase of size of the abdomen after two or three months, provided it is not the result of disease, is a sign of pregnancy. The uterus always enlarges as the embryo develops, and rises up above the brim of the pelvis. This sign is liable to be confounded with dropsy, flatulence, tumors, or excess of fat. Quickening(the motion of the child) felt by the mother about the beginning of the fifth month, is one of the more positive signs of pregnancy, although "wind" in the bowels *might* be mistaken for the motions of the child. A feeble child, or excess of amniotic fluid, may also obscure the movements. The beating of the fœtal heart, which is nearly twice as frequent as the pulse of the mother is a *positive* sign when it can be made out. This sign is of no value till after quickening. The stethoscope and an educated ear may be necessary to detect it. Braxton Hicks tells us that the contractions of the uterus, which occur irregularly *after three months,* may be felt by the hand placed firmly over the abdomen and uterus. The contractions occur at intervals of five or ten minutes, and last two or three minutes. It is called Braxton Hicks' sign.

The enlargement of the breasts and the secretion of a milky fluid in them which can sometimes be expressed after

the first two or three months are *probable* signs only. *Uroscopians* depend for diagnosis of pregnancy upon the examination of the urine. They take a specimen from that first passed in the morning in a small vial, shake it well, and if the froth settles *immediately,* they mark it as a case of pregnancy. A filmy deposit (Kyestein) upon the surface of *decomposing* urine—after standing several hours—was *once* thought to be a sign of pregnancy, but is now abandoned. Dr. Denman tells us that the navel or umbilicus, which for the first two months is drawn in, comes gradually forward as pregnancy advances, till it becomes even with the integument, and in the later months protrudes, till within a few days of confinement. Ballottement, as a sign, comes to us from the French. A push is given to the uterus by the finger inserted into the vagina while the patient stands, and if the fœtus be present, it moves up and falls again like a ball in water. This sign is only available from the fourth month to the eighth; about three months. Some abnormal conditions may prevent it entirely. Other signs are mentioned by authors, but they are of no value.

The period of gestation is usually about 280 days—ten lunar months, or nine calendar months—but may be protracted to ten calendar months, and is usually reckoned from the last menstrual period preceding conception. It is well for woman to observe and mark her period of menstruation for several reasons. To many, as now living, it is a period of illness and pain, and to such no great fatigue or exposure should be allowed for two or three days before the regular period for the menstrual flow; and married women have another reason which is connected with the most fitting time for impregnation of the ovum. The period of ovulation and conception is especially important and requires the most perfect state of mind and body for the good of the individual and of the race.

Maternity.

Sickness and pain came into the world through sin and error; they will go out by the same door pursued by the goddess of health. It is easier and cheaper to live well than it is to live poorly. The secret is to know how. It was after the fall, not before, and in consequence of it, that woman was condemned to bring forth in sorrow. And why should she not be sorry to bring offspring into misery; while she will always rejoice to bring offspring into a life of boundless joy and pleasure, such as always attends upon perfect health. We are justly driven out of the garden, when we fail to keep it properly. The body is the garden of Eden—a place of delight—to those who keep it sweet and pure. It must be well aired within and without and built up of the finest material, the fruits of our Mother Earth. Pain in child-birth is a morbid symptom. It is caused by modes of living inconsistent with the best health. It was not motherhood that was cursed, but the person herself on account of error. The process of child-bearing is a natural and painless one in health. Why not learn the painless method? An open-air life, free from all drugs and poisons, sensible clothing, abundant exercise, and simple and wholesome food; these will soon change the curse into a blessing.

In the early days of pregnancy an *abstemious diet* is absolutely required. There can be no nausea, absolutely, unless there is something to be gotten rid of; too much waste in the system or too much food. Remember, that in laying the foundation of a building all rubbish must be cleared away. So in pregnancy the blood and circulation must be clear and free. The body of the infant is the temple about to be reared. The juice of the lemon and orange, a nice baked apple or pear, or the juice of nice grapes, is the best food for plethoric

persons during the first week or two of pregnancy. At any rate see that the system is not clogged at any time. A little sugar may be added to the juice of the lemon, and soft, pure water. An abstemious fruit diet with plenty of open air and exercise will soon remove all nausea and ill-feeling. A daily bath followed by brisk rubbing with the warm hand will promote cleanliness and health. In taking exercise be reasonable always, but do not neglect it. Be moderate at first and avoid great fatigue. Heavy lifting is not suitable, but long and gentle walks, or light gardening are health-giving. Suspend all clothing from the shoulders, and never compress any part of the body out of its natural shape. Secure free ventilation. This is necessary for all. Let the windows be open at the bottom rather than the top, in order to secure the escape of the heavy carbon di-oxide which is continously generated and eliminated by the lungs. This gas is considerably heavier than the common air and falls to the floor of the apartment. In very cold or stormy weather the door of the sleeping apartment can be secured with a chain and then slightly left ajar, and the windows closed, if necessary, in order to be comfortable. Bed clothing must be always light. Flannel blankets are generally both warm and light. Exercises in voluntary deep breathing must not be neglected for many hours at a time unless when taking some active exercise of the muscles, which usually compels deep breathing. This habit is necessary to oxidize the blood and at the same time decarbonize it. Breathe through the nostrils, unless when running rapidly, which requires possibly more air than can be taken through the nostrils. These breathing exercises are sometimes called *lung gymnastics*. They should be practised in all cases of cough, asthma, colds, consumption, bronchitis, pneumonia, croup and catarrh, until the difficulty is fully removed; resting and practising alternately for two or three minutes at a time until relieved. (See book on Consumption, by the author.)

Learn to breathe and develop the lungs and you can ward off many attacks of disease. Keep the blood well aired and supplied with pure and wholesome food; the muscles well trained and exercised, the air free from noxious inhalations from your own and other animal bodies by efficient ventilation, or, what is better, *outdoor life,* and you have the essential conditions for painless childbirth.

To have perfect health in pregnancy requires only such food, exercise, ventilation, deep breathing, habits and customs as will preserve health under normal conditions, since pregnancy must be considered a perfectly natural and healthful process. As to diseases of pregnancy we shall say nothing, because there *are* none. If disease occurs *during* pregnancy it is not *because* of pregnancy, but because of wrong conditions. The pregnant female may be *more sensitive* to wrong conditions, and often is, but any painful or disagreeable symptom arises from some habit, neglect, or environment which needs correction in order to enjoy perfect health. Let us hear no more about diseases of pregnancy, of age or of sex. Health, under right conditions, is the rule for all.

A woman may have metritis (inflammation of the womb) but inflammation is not the disease. The *disease* is pain in the *location* of the womb, and a sensitive man may have the same or similar pain in precisely the same spot or location, in his own body through sympathy alone; and if the pain or disease is not absolutely confined to one sex, it cannot be called a disease of that sex. A man has no uterus it is true, but he can sometimes feel uterine pain through sympathy. This may be denied by those who have not experienced it. A man does not ordinarily nurse an infant at the breast, yet such cases have been reported.

Man is a generic term for the race; and the term man

properly includes both sexes. Like conditions produce like effects in either. Woman is the *womb-man,* and is made sick or well by the same means as the other sex. The prospective mother needs essentially no different treatment, or conditions for health than others, except it may be some slight change of diet to provide material for constructing the body of the child. Sometimes a little limewater may be needed to supply *osseous* tissue. A health education belongs of right to all. Wrong conditions are the source of disease; right conditions always secure health.

Parturition.—Prepare a square yard of rubber cloth, absorbent cotton or soft cloths, white Castile soap, olive oil, lard, or lanoline, safety pins, scissors, and ligatures for the umbilical cord. It is well, also, in case of delicate patients to provide a rubber bag for hot water.

The doctor and nurse, if a servant is within call, are generally sufficient for attendants, though a lady friend is often desired. The mother of a family should be preferred as nurse. Keep the air of the room reasonably cool, but the patient comfortably warm at all times. *Cheerful and agreeable* conversation is not always out of place in the parturient chamber, but any *depressing* influence may retard the natural process of delivery. Delicacy will be appreciated by the patient, but *false* delicacy is out of place anywhere. Do not force the patient to eat. A cup of water, tea, or lemonade is usually all that will be required, unless in a case of protracted labor. At such times the food should be of the mildest character. The rubber bag for hot water is generally not essential, *provided* the patient is in firm robust health. For delicate patients and invalids, the rubber bag is a convenient way to apply artificial heat to the feet or any part of the body. For persons who suffer much in childbirth a little chloroform or ether, provided to be inhaled while the head is passing the

inferior strait of the pelvis (near the close of the second stage of labor) often gives great satisfaction to the patient.

The principal symptoms of *approaching* labor are the subsidence of the uterine tumor in the abdomen caused by the slow and usually painless contractions of the uterus; and the relaxation and increased moisture of the vagina and labiæ The subsidence may take place several days before confinement, and in a single night. Anxiety and perturbation of mind is also regarded as a strong indication of approaching labor. As labor approaches, or begins, there is usually frequent inclination to empty the rectum and bladder until the head of the fœtus is well down in the pelvis. This is a necessary provision of nature in order to give room in the pelvis for the passage of the fœtus. Nausea and vomiting, when necessary to relieve an irritable or distended stomach, is not very uncommon. In case of a tense os uteri (mouth of the uterus) the physician sometimes thinks best to *induce* nausea to help relax it. This, though usually unnecessary, may be done by giving a teaspoonful every fifteen minutes of a weak mixture of lobelia tea and water. It is well to alternate with warm herb tea of spearmint, hops or sage. Hot herb tea or weak lemonade may also be given for chills. See that the extremities of the patient are warm and the skin soft and moist.

Another symptom of labor is the discharge from the vagina of a glairy mucus which serves to lubricate the parts. It is called by nurses "the show." The breaking or rupture of the membranes which inclose the fœtus, which occurs sooner or later in labor, lets loose the amniotic fluid in which the fœtus floats and causes usually a sudden and considerable discharge of this watery fluid, which is thinner than the secretion from the vagina and is called "the *waters*." These discharges may be more or less tinged with blood from the

uterus as the placenta becomes more or less separated from the uterine wall. The most prominent symptom of labor is what is usually called labor-pains, though in a perfectly healthy state what is called labor-pain is only a painless *contraction of the uterus,* which is necessary to expel the child The pain is caused by the sensitiveness or disease of the uterus, the same as when a muscle is affected with rheumatism. In ordinary cases true labor-pains (more properly uterine contractions) *recur regularly,* and increase in *frequency* during labor.

Too severe pains may be modified, or relieved, *when advisable,* by the inhalation of ether or chloroform. The latter is much used by some physicians, but it should be used understandingly or not at all. Chloroform undoubtedly increases somewhat the liability to post partum (after delivery) hemorrhage, and in *some cases retards the parturient process.* Previous training and right living will obviate all occasion for its use. Some prefer ether to chloroform as being less liable to produce ill effects. Neither should be used near an artificial light.

The progress of the parturient process may be determined, if necessary, by an examination per vaginam (through the vagina.) The *first stage* of labor ends with the complete dilatation of the os uteri and cervix (neck), so that the fœtal head passes into the vagina; that is to say, at the end of the first stage of labor the os uteri is entirely obliterated and the neck of the uterus becomes continuous with the walls of the vagina; the *second stage* of labor ends with the expulsion of the child; and the *third stage* with the expulsion of the placenta (after birth).

The first stage, as a rule, is much longer than the second. The patient will do better to sit up or walk about ad libitum during the first stage, until the head is well down in the

vagina, as the gravity of the fœtus promotes its descent. During this period the patient may save her strength much as possible for the second stage and not exhaust herself by "bearing down," as the phrase is.

If at the first examination the os be not dilated to the size of a nickel, or sixpence, and the amniotic fluid has not been discharged by the rupture of the membranes, it may be several hours, and possibly days, before labor will be terminated.

If the bowels are constipated they should be relieved by the use of warm water enemas with the fountain syringe. If so-called *spurious* pains annoy the patient they may usually be relieved by a warm sitz bath and massage treatment, or by the use of some stimulating liniment well rubbed into the skin over the back and loins. Camphor liniment (camphor and cotton-seed oil) serves well for this purpose, or any hot application.

If the membranes enclosing the liquor amnii are not ruptured during the first stage of labor by the natural contractions and force of the uterus 'tis customary for the attendant to break the amniotic pouch during a forcible contraction, when it may be distinctly felt protruding beyond the child's head into the vagina. Sometimes it is so firm that it is not easily ruptured, and the attendant notches the nail of his index finger into one or two points like the teeth of a saw, or uses some other simple means to allow the liquor amnii ("river water") to escape, which diminishes the size of the uterine tumor more or less, depending upon the amount of amniotic liquid in the uterus. During the second stage, until the head reaches the floor of the pelvis and begins to distend the perineum, the patient may walk or sit up in bed with her feet fixed and pull, if she desires, the hands of the nurse standing at the foot of the bed, or upon a sheet or something

attached to the lower part of the bed. The knee-chest position is sometimes assumed. The easiest position is the best. In the knee-chest position the perineum will require no support.

During this period she may aid by bearing down during each pain (or uterine contraction) but should discontinue the effort when the head pushes hard against the perineum, leaving the process to nature by more spontaneous action. If the process is a little slower it is less likely to rupture the perineum. If the head remains stationary at the perineal floor for more than two hours (is the rule of some) labor may be terminated by the use of instruments carefully and properly applied, although rarely necessary. Occasionally the cervix uteri (neck of the uterus) descends into the pelvis with the fœtal head and may become impacted between the head and pubic bone, and possibly retard the progress of labor. When this occurs the anterior lip of the cervix may be pressed up or back with the fingers just before and during a "pain," so as to liberate it, allowing the head only to descend into the pelvis. For easy delivery, let the patient lie upon the side, but she need not take this position until the head begins to distend the perineum, nor keep it after delivery; the knees may be drawn up towards the abdomen, and may be sustained by the nurse. After the perineum (floor of the pelvis) is considerably distended the head must glide *forward,* in the axis of the pelvis and pass beneath the arch of the pubis. The attendant may favor this movement by placing his open hand upon the perineum just beneath the head, and making moderate pressure during a pain in the direction of the sacrum. This is called supporting the perineum. When the head is born support it until the body is expelled, then lay the infant near the side of the bed without dragging upon the cord. If respiration of the child occurs

immediately it is generally known by a very distinct but usually welcome cry of the infant. If the infant does not cry or breathe it must receive immediate attention. Placing the child in a basin of hot water (105 degrees Fah.) and sprinkling a little cold water upon its face, or rubbing the chest with a little spirits of camphor may incite respiration. If this does not succeed, then use artificial respiration. Inflate the lungs. (See "Artificial Respiration" in Technics of Medicine.)

Do not sever the connection of the child from the mother by cutting the cord nor arrest the circulation by tying the cord until respiration of the child is fully established, so long as there is any hope of life—at least for an hour. Some tie the cord soon as respiration is fully established; others, with better reasons, perhaps, advocate "late ligation" after all pulsation has ceased in the cord. Some go farther and do not ligate at all, but sever the cord only after the circulation has *entirely ceased* in the cord, and becomes independent in the infant. Two ligatures are generally placed upon the cord, one about two inches from the umbilicus of the child and the other three. The cord is then severed between the ligatures by means of scissors. See that the little fingers and toes are not suddenly thrust between the blades of the scissors as the cord is severed. If after placing one ligature the blood is pressed away from it out of the cord before the second ligature is applied, it will prevent the danger of soiling the clothes or linen of the attendant with blood imprisoned between the ligatures. Soon as the cord is severed the child may be handed to the nurse and attention given to the third stage of labor, viz: the delivery of the afterbirth. Some nurses rub the baby with olive oil or lard, and leave it in a warm place to rest and sleep before it is washed and dressed.

The afterbirth is generally expelled from the womb (or

uterus) soon after the birth of the infant—on an average of about thirty minutes—but it may be retained, *possibly,* until mechanically removed or decomposed. Ninety-nine times in a 100, and one author says 999 times in 1,000, the placenta is detached by the same, or similar uterine contractions that expel the fœtus, and it may be found lying at the mouth of the uterus, or even in the vagina fifteen or twenty minutes after the birth of the child. In this position it is easily removed by gentle and continued traction of the cord. Twist it two or three times around the fingers of one hand and with the other bear down upon the cord just within the entrance of the vagina (provided the patient lies upon her back) so as to carry the direction of traction in the same line as the axis of the pelvis. In this way the placenta is easily and safely removed.

No great force—beyond a few ounces—must be used in traction, lest the cord be severed, the uterus inverted, or hemorrhage produced. Remove the afterbirth gradually, so as not to separate the membranes. If the after birth (placenta) remains in the uterus more than twenty minutes after the birth (close of the second stage of labor), hot applications to the abdomen over the womb, or gentle kneading of the uterine globe through the abdominal wall is generally sufficient to excite contractions necessary to expel the placenta and close the bleeding vessels of the uterus. In case of dangerous *hemorrhage accompanying a retained placenta,* which arises from fright or some other abnormal condition of mind or body, it is considered good practice to pass two or more fingers into the womb and *remove the placenta.* The use of the *hot douche* into the vagina will generally obviate the necessity of such mechanical interference. The water must be hot (110-115 degrees Fah.), as warm water will do no good.

Crede's method of expressing the placenta is the plan usually employed in hospitals. It consists in first making manipulations over the uterus to excite contractions. *During* a contraction the hand grasps the uterus firmly through the abdominal wall and makes moderate pressure in a direction towards the pelvic cavity, while the other hand makes gentle traction upon the cord to slowly withdraw the placenta when it enters the vagina. This method is well known in Germany. Some still advise the administration of fluid extract or tincture of ergot (spurred rye) in half drachm dose to rouse contractions, but it is a poison, and by *reformed physicians* has long been abandoned.

Emptying the uterine cavity (removing the placenta) and injecting hot water (110 degrees Fah. or 43 degrees C.) are the most prompt and efficient means for arresting post partum (after delivery) hemorrhage. *No alcoholic stimulants* should ever be administered in such cases. If anything is to be given beyond a cup of tea or coffee, *cinnamon* tea may be used.

Those who do not tie the cord, as a general thing do not place any bandage around the mother after delivery. As to bandaging it is well to follow the inclination of the mother, provided the bandage is not made very tight. The rule is to make the patient comfortable as you can. This will require cleanliness, a dry bed, warmth and rest. To protect the eyes of the babe from too strong a light let curtains moderate the light of the room.

The hot sitz-bath is the best temporary means to relax any *unusual tension and rigidity* of the os uteri and vulva, and also to relieve what is called spurious pains. Seat the patient in a tub of water hot as she can well bear and place her feet in a hot foot bath at the same time. Envelop her in

blankets (all but the head) and increase the temperature of the bath, if necessary, from time to time by pouring in hot water until the patient perspires. Give a glass of lemonade or weak tea, if she desires. After perspiring freely the skin must be dried with towels and rubbed well with the warm hand in a room comfortably warm. The hot bath will more than supply the place of ipecac, ergot and cohosh. Poisonous drug medication is rapidly becoming unpopular. After the expulsion and removal of the after-birth (or placenta), change the soiled bed clothes for others that are clean, warm and dry and leave the mother as comfortable as possible.

After the child is washed the remnant of the umbilical cord that is attached to the abdomen is usually passed through a hole in the center of a square piece of soft linen, in which it is enveloped and turned up on the abdomen towards one side. It soon dries up, and in three or four days drops off.

The nurse usually sees that some cloths are placed to receive what is called the "lochia" (the discharge that continues for a week or two after confinement). If the discharge is offensive at any time the vaginal syringe must be used with some disinfecting or antiseptic lotion. Boric acid or a little permanganate of potash may be used. The medical attendant usually calls again within a few hours to see if there is any excessive hemorrhage or pain, and if the child is normal and well. It is better not to feed the child before allowing it to nurse, provided the mother's milk is sufficient. The breasts begin to fill usually the next day after confinement, but may not furnish much milk till the third day. If anything is given the child before it is supplied from the *breast of the mother who nurses,* let it be only a little water. It will sleep, if allowed, most of the time. If the mother is properly

fed no cathartic will be required. If necessary, the fountain syringe may be used the third day. It is a common rule to keep the patient in bed for at least a week. The womb is at this time large and heavy, and its weight is apt to cause a dragging sensation, unless the woman is very well and muscular, if she is too early on her feet. Much depends on the case.

Irregularities.—Rupture of the uterus, which is *mentioned in the books,* but rarely, if ever, occurs in practice, is probably due to the abuse of drugs, the operation of turning, or other meddlesome interference of the attendant. There would no doubt be fewer complications in childbirth if more was left to the processes of nature. *Actual* rupture of the uterus would certainly be a grave complication. One author says it *has* occurred once in 1331 cases. No case of this kind has ever fallen under our observation.

Authors do not agree exactly as to the natural time for the expulsion of the placenta. One says ten or twenty minutes after the delivery of the child; another says thirty minutes to two hours. It may happen that the child and placenta are expelled very near together. In such a case there would be *no third stage of labor.* If a considerable quantity of blood (a pint or more), escapes during the third stage, or later, it is termed *post partum hemorrhage.*

In cases of *retained placenta,* accompanied by hemorrhage, it is better to ask for consultation before removing it by introducing the hand, unless it might occasion too long delay. The principal danger in such a case is from hemorrhage; and subsequently, if not removed, from the decay and putrescency of the retained matter. If there is any foul discharge from the vagina at any time, it must be corrected by the use of disinfectant or antiseptic lotions. Alcohol and water, equal parts, tincture of myrrh, or a strong solution of boric

acid, may be used locally in such cases. *Placenta previa* (where the placenta lies over the os uteri, so that its expulsion precedes the birth of the child), occurs, it is said, about once in 1,200 cases. It is usually attended with more or less *ante*-partum hemorrhage.

Twins, or plural births, occur about once in eighty births. It is well for the attendant to bear this fact in mind. The unusual size of the womb after the first birth and the presentation at the mouth of the womb of *another* "bag of waters," or fœtal head, is the best means of diagnosis of plural births. Do not attempt to remove the placenta, in case of twins, till after both are born. The two *placentae* will be expelled together. The uterus may be inactive, or in a state of rest, for some little time after the first birth, but there is no danger on account of twins.

The ratio of *triplets* to single births is one to 7,000. *Four at a birth* occurs once in about 370,000 cases.

Abortion.—Abortion is premature delivery, or miscarriage. Criminal abortion is that produced by artificial means in the absence of good and sufficient therapeutic reasons. When *not* produced by intention, or by artificial means, it is called spontaneous abortion. It is inevitable when the embryo, or fœtus, is dead, or the membranes that inclose the liquor amnii have been ruptured. It should be extensively known that there is no drug or material agent that is sure to produce abortion, or can by any possibility produce abortion without more or less injury to the person who takes it; and no intelligent or honorable physician ever gives or recommends drugs for this purpose. Neither is it safe for any woman to operate upon herself. In cases of necessity, as determined by a *council of physicians,* the careful rupture of the membranes at the *fifth* month is the one method that offers the least danger.

In some rare cases the child is born without rupturing the membranes in which the fœtus is enclosed. In such cases the child is said to be born with a *"veil over its face."*

In cases of difficult labor the long-continued pressure upon the head of the fœtus causes a protuberance, or swelling, upon the presenting part, usually at the vertex of the head, which has received the name of *caput succedaneum* or tumefied scalp. It naturally disappears in a day or two, and need cause no apprehension.

The *use of instruments* is frequently resorted to in order to hasten delivery, but is generally unnecessary. The head of the child is always quite plastic, owing to the unossified or membranous condition of parts of the cranium, and will take the form necessary for it to pass the pelvic straits and vaginal canal, unless under very abnormal conditions.

In some cases the cord is around the child's neck. Enlarge the loop and slip it over the child's head, if it can be done without dragging too heavily upon the cord and placenta (for the placenta may still be atached to the uterus), or deliver the shoulders and body through the loop.

Labor is considered natural when the child's *head presents* and the labor terminates *within twenty-four hours.* Ninety-six cases in a hundred are head presentations, and some say more. If the time of delivery extends beyond twenty-four hours it is commonly termed a case of *difficult* labor. If the head does not present but the breech, side, or shoulder, or possibly some other part, it is called *preternatural* labor. If complicated with unusual hemorrhage, convulsions, or other embarrassing circumstances, it is called *complex* labor.

Conditions that more or less Simulate Pregnancy.

1. Congestion of the uterus, accompanied with amenorrhœa (cessation of the menses). In this condition there is more or less pain and tenderness of the uterus. Time determines the true condition.

2. Dropsy of the abdomen. This condition is always accompanied by *impaired health.* It simulates pregnancy only by increase of size of the abdomen.

3. Fat in the abdominal (or belly) wall. The fat may be discovered by taking it up between the hands. It usually occurs at or after the menopause, at forty or fifty years of age, while pregnancy occurs before. No other signs of pregnancy are present.

4. Ovarian tumor. This also attends poor health. The tumor begins on *one side* while the gravid uterus, is in the median line. The growth is slower than in pregnancy.

5. Fibroid tumor of the uterus. (The uterus itself becomes changed in structure and forms the tumor). The tumor feels very hard and is of slow growth. Menstruation is *present,* but irregular and profuse. Other signs (except the tumor) of pregnancy will be absent.

6. Accumulations of fluids, or gases, in the uterus. These may be recognized by the disturbance of the general health, and the *absence of other usual signs* of pregnancy except cessation of the menses.

Observations.

In making vaginal examinations care must always be used not to injure the eyes or face of the child in face presentations. Before making a vaginal examination wash the hands clean and anoint them thoroughly with lard, oil, or lanoline.

Work the oil under the finger nails to avoid the persistent odor that otherwise sometimes clings to the hands. 'Tis well for the nurse to see that the external genital organs of the mother or patient are well bathed at the beginning of labor, and if there is any suspicion of any local disease, let a solution of boric acid or tincture of myrrh be applied to prevent sore eyes of the infant (ophthalmia neonatorum). In the hospitals a solution of corrosive sublimate—one part to 2,000 of water—is used for this purpose, but it requires a *subsequent washing* with pure water, or *the drug itself may cause* sore eyes. The napkin placed at the vulva to receive the "lochia" may be dipped as an antiseptic precaution in a warm solution of boric acid and wrung out and dried before being applied.

For *rigidity of the cervix uteri* rectal injections of chloral are often given in the hospital; but the *warm sitz bath* is usually quite effective. (Water 105 to 110 degrees Fah.)—Be sure that the bladder and rectum are well emptied before the second stage of labor. Uterine contractions *may usually be increased* or promoted by walking or change of position of the patient and by giving hot herb tea or hot lemonade. Temporary exhaustion in the first stage of labor is an indication tion for *temporary rest.* After a good rest everything goes on well. To induce rest the common (Allopathic) practice is to give morphine or choral; and one author (Ashton) advises doses of choral, that other authors (Oldberg and Wall) say have been known to prove fatal. If any hypnotic or anodyne is *thought advisable* by the medical attendant, 5 grains of choral with 1-10 of a grain of morphine, given by the stomach, *not* used hyperdermically, will be found to have a better effect than either chloral or morphine separately. The skillful attendant will generally be able to avoid *all* drugs;

but some impatient patients, till better taught, will not, perhaps, be satisfied without them. The best means to the best ends will be interpreted differently by different attendants till science—the perfect way—becomes universally known.

Manual pressure may sometimes assist the parturient efforts if the uterus is not too tender to forbid it. Place the hands—both hands—externally over the sides and body of the uterus and during uterine contractions make moderate pressure downward and backward towards the pelvis. It may be helpful at opportune moments, but any considerable pressure on the fundus alone might cause inversion of the uterus. Prolapse of the cord (descent of some portion of the cord in advance of the child) occurs, it is said, once in about 300 cases. It offers no danger to the mother, and to the child only because it temporarily obstructs or interrupts the circulation in the cord.

Labor may be induced prematurely when justifiable *as determined by a council of physicians.* Some of the reasons *usually* assigned for justifiable induction of premature labor (before the full period and after the child is capable of independent life) are, (1st), accidental and unavoidable uterine hemorrhage; (2d), excessive and continued vomiting; (3d), dropsy of the abdomen; (4th), convulsions; (5th), pelvic deformity. The latter is very rare.

The induction of abortion (expulsion of the fœtus before it is sufficiently developed to sustain independent life) is also considered justifiable when *necessary* in order to save the life of the mother. Excessive and protracted vomiting (hyperemesis), and organic disease of the kidneys are by some authors considered an indication.

In case of necessity as determined by *two or more physicians* in council, regard must be had to times and means.

There is more danger from hemorrhage and the retention of the placenta during the third and fourth months of gestation, and some include the 5th and last part of the 2d; the safer time being during the first six weeks of gestation, or after the fifth month. As to means, the safer is probably the rupture of the membranes inclosing the ovum or fœtus, providing no injury is done to the uterus or organism of the mother. Some advise in preference injections of hot water (106 to 108 degrees Fah.) given three times daily for three or four days by means of a fountain syringe that will hold a gallon of water.

Any means is to be deprecated unless there is intelligent and urgent need of its use. The use of *unjustifiable* means is designated as "criminal abortion."

Constipation.

Constipation signifies, literally, to stuff or cram together, and is applied chiefly to the stuffing of the colon (large bowel) which occurs whenever there is not activity enough of the muscular coat of the intestine to properly expel its contents. The same condition is also called costiveness. A person may have a movement of the bowels daily and still be more or less constipated. Some fœcal or waste matter may be discharged and still much remain in some parts of the colon. The muscular system of the entire body must be kept active and vigorous by means of reasonable and suitable exercise in order to secure proper action of the bowels. And this is a matter of much importance. The retention of waste matter anywhere in the system tends to clog and interfere with all vital, muscular, and mental processes. It gives rise to fermentation, decomposition, and to the production of many poisonous products and insoluble substances, like lithic (uric) acid, and also to many lower forms of veg-

etable and animal life which are incompatible with purity and health. A considerable portion of the dregs or waste of the system is secreted from the venous blood directly into the larger bowel, and that, together with such indigestible matter as may be expelled from the small intestine through the ilio-cæcal valve, must be quickly discharged from the body in order to secure the most perfect health. To this end we must see to it that we attend at once to all *normal* calls of nature.

> "At least six times in every fleeting day
> Some tribute to the renal function pay,
> And twice or thrice all *alvine* calls obey."

More frequent calls than these are the result of abnormal irritability and may be properly ignored.

If one or more alvine calls do not occur each day, under ordinary circumstances, as when taking food regularly, it is well to correct the diet if possible, take more vigorous exercise, or, if necessary, use the fountain syringe with two to five pints of water to promote action of the colon. No fermentation should be allowed in the colon. Much depends on diet. For sedentary life the use of rye is to be chosen, in the form of bread or mush, in preference to Indian corn, or even oatmeal. The latter are too heating and heavy, except for persons performing manual and heavy labor. Rye mush, made by stirring freshly ground rye meal into *boiling* water, and taken with a little sweet cream, or sugar-house molasses (treacle), or milk, makes a very nice daily breakfast for sedentary life without any other food. The *freshly ground* meal is always best, and the coarser hulls, which are largely cellulose, may be sifted out. In place of rye mush, wheatena or wheatlet, if preferred, may be used, or even oatmeal or rolled oats in place of Indian corn meal. For other meals a selection of *one or two* kinds may be made from the fol-

lowing, viz.: a fresh egg or two beaten up with a little milk; rye bread and milk; whole wheat meal bread and milk; rolled wheat, or rolled oats, taken with a little sweet cream or milk; baked apples and pears (these may be eaten raw if *nice and ripe,* but otherwise are better cooked); boiled onions (Bermuda are best); parsnips (best when freshly taken from the ground in spring); green peas; good ripe tomatoes; the juice of oranges, lemons, grapes, and other nice fruit in its season; and for quenching thirst and giving fluidity to the blood, water and lemonade. Drink freely to quench thirst, whenever present. If animal food is taken, let it be the best beef, lamb or mutton, fresh fish, or wild game. Salted meats are more difficult of digestion, and for other reasons given elsewhere are not advised. Cheese, unless taken at long intervals, leads to constipation. If craved with an honest appetite for it, it may be allowed occasionally, but is considered binding. Cauliflower may be wisely substituted for cheese in all cases of constipation. It is better to avoid all pastry food, especially doughnuts and pie crust. Avoid all salted and dried fish, sausage, spices, baking powders, pepper, crackers, beans, tea and coffee. A cup of uncolored Japan tea or coffee may be taken, *as a medicine,* in case of great exhaustion.

Any excess of starch or starchy food, like potatoes, rice, etc., will tend to clog the system, and the same may be said of butter, oils and fats. These latter are more appropriate for cold weather and hard work. They supply material for muscular energy and animal heat. Food must be sought that will not cause an uncomfortable feeling of fulness, or distension of the stomach and bowels. A small quantity of food, if of the right kind, will satisfy the appetite better than a large quantity that is not required for immediate use. A natural appetite makes the best selection. Good mastication

is essential in order that the food may be more quickly dissolved and appropriated while it is fresh. Solution is one of the first steps in the process of digestion. Take nothing as food that cannot be dissolved.

Friction, rubbing, or massage over all parts of the abdomen two or three times per day by the patient himself, or less frequently by a good magnetic operator will help promote vital action of the bowels. If not convenient for the patient to walk or ride for exercise, he can secure the advantage of both in large degree by the following athletic exercise.

Standing with the feet well apart to broaden your base, bend or flex the lower limbs at the knees, and extend the same, about twice a second, or one hundred times a minute, for several minutes at a time, three or four times a day, and at the same time twist or turn the body above the hips, first to the right and then to the left, as far as you well can, resting the hands upon the hips, or allowing them to hang by your side. At each turn of the body toward the right or left you will bend the knees about three or four times. You thus use chiefly the flexors and extensors of the thighs, and the rotating muscles of the trunk. The motion of the body is meanwhile up and down, and the motion of the chest and head is alternately to the right and left. To facilitate the turning of the body, the heel of the limb opposite the one on which you rest, as the body sways from side to side, may be raised so as to allow the limb to turn upon the ball or toe of the foot. To get the best effect of this exercise the head must be kept well up, the shoulders back, and the spine erect during the exercise. The bowels may generally be allowed to rise and fall with the body, but at times it is well to exercise the diaphragm by endeavoring to draw up beneath it the liver and viscera of the abdomen. [The preceding exercise is purely the invention of the author, and was devised by him

for the treatment of constipation without drugs. After twenty years' trial without the use of any cathartic or laxative medicine, or drugs of any kind, he confidently offers it to the public, in connection with judicious management of food, as an entirely reliable and efficient remedy for that physical parent of many ills—Constipation.] Exercise, if properly taken, will in a few hours' time create a demand for any food which may have been at the time excessive. Ideal remedies are infinitely better than drugs. The effect of drugs at best is only temporary, and often much harm is done by using them.

In the use of purgatives, the bowels naturally require rest for a day or two after purgation; and after purgation, which is usually a severe tax upon the muscular energies of the patient, the bowels may be allowed to rest for several days (three to five) without motion. It is also *possible* in case of an extremely light and pure diet, or during fasting, for the other eliminating organs to perform, perhaps, for weeks and months the office of the colon. These are all exceptions to the general rule of normal action daily.

The term constipation may also be applied, with more or less propriety, to the stuffing or crowding of the stomach and small intestine, either with an excess of food or with matter that is indigestible, such as the cellulose or woody fibre of plants, the hulls of cereal grains, the skins and seeds of fruit, the bones and scales of fish, the gristle and bones of animals, pie crust and all dough that is encased or infiltrated with fat. All these and some other matters, when taken into the stomach, load and clog the stomach and bowels and tend to produce constipation. It may be laid down as a rule, which should never be set aside without good reason, that NO INSOLUBLE SUBSTANCE SHOULD, AS A RULE, BE TAKEN INTO THE HUMAN STOMACH. Nothing can be appropriated as

food until it can be taken into the circulation and distributed. It must be first of all dissolved. All fatty matter must be broken up or emulsified by aid of the bile and pancreatic juice before it can be taken into the circulation, and must, also, be oxidized by aid of air taken into the lungs before it can aid in producing heat, vital force or energy; therefore, no more fatty matter must be taken into the system than can be *emulsified and oxidized*. Any excess of food must, of course, remain in the stomach and bowels until it is needed, and if taken into the blood in excess it must of necessity tend to clog the circulation.

In all inflammatory disorders an excess of fibrin may be found in the blood. Whenever there is a sense of fulness, uneasiness, or distension of the stomach or bowels it is well for us to consider whether we do not need to fast one or more meals or take more vigorous exercise, and perhaps also simplify our diet. There is one thing more to be observed in all cases, and that is the attitude, state or condition of mind. The soul will have its way with the body, and by the term soul, we mean not the intellect merely, but the deeper emotions of the mind; that which governs all action in the body, both conscious and unconscious, the voluntary and involuntary muscles. The action of the bowels is governed by the sympathetic nerves, and is not under the direct control of the human will, but is under the control of the soul; and all such action will be normal, or healthy if not interfered with by the human mind; hence the need of a true education and true philosophy of being. Anger, fear, or distrust may *derange all vital processes* in the body as certainly as wilful neglect or mechanical violence. Fear and distrust of the soul in regard to healthy action tends to retard or repress peristaltic motion of the bowels. The true scholar and philosopher never doubts the beneficent purpose of natural law.

Haemorrhoids, or Piles.

The term haemorrhoids signifies a "flow of blood," and is applied only to a discharge of blood from the haemorrhoidal veins at the lower part of the rectum, or about the anus. Haemorrhoids and piles are synonymous terms. Piles is of Latin origin, and signifies round masses or balls. The term is applied to painful bunches, tumors or excrescences about the anus, sometimes external, and sometimes within the external sphincter muscle. These abnormal bunches consist usually of distended veins, or varices, and are owing to local retardation of the venous circulation. When the bunches are within the external sphincter, they are said to be internal piles, otherwise, external. If they burst and bleed they are called bleeding piles, otherwise, blind piles.

A clogging of the portal circulation in the liver may give rise to piles just as a river overflows its banks, when dammed up below. The blood from the haemorrhoidal veins (the seat of haemorrhoids) has to pass through the liver on its way to the heart and lungs. If it is choked or clogged in the liver, it sets back in the portal circulation, and distends the veins of the rectum. An excess of sugar in the food, or diet may clog the liver, since the liver is known to store or lay up glycogen, which is a form of sugar.

Another cause of piles is local irritation of the rectum from the use of aloetic and drastic purgatives. Many a case of piles has been traced directly to the use of aloes. Constipation, also, if it does not cause piles, adds to the irritation of the rectum.

There is still one other cause that must not be overlooked. It is straining of mind and body. A severe strain may cause prolapsus of the rectum.

For temporary relief local applications of ointments, washes, suppositories and baths are used; for radical cure surgical operations *are* often performed; but the only rational treatment for permanent cure consists in removing the cause or causes that produce the trouble.

If the bowel protrudes anoint the finger with some unctuous substance or ointment and return the protruding bowel within the sphincter. This the patient can do for himself. Do not allow the bowel to remain down.

To relieve the distended colon of fœcal and irritating matter, make use of the fountain syringe and warm water daily, if necessary. The evening is by some considered the better time for stool in this complaint. For permanent cure, fasting and abstemious diet, rest and mental quietude are the surest and safest remedies. Lemonade may be freely used as a drink.

To secure immunity from piles, the diet must be such as will prevent clogging of the liver and circulation. Eliminate from the diet any excess of sugar, fat, and starch. A vegetarian diet is by many considered preferable. Rye mush and milk is admirable.

To give *temporary relief from pain,* the following ointment applied three times a day is generally effectual: vaseline, one ounce, solid extract of belladonna, tannin and powdered opium, ten grains each. Mix and apply two or three times a day. Some prefer a suppository made of cacao butter (oil of theobroma), tannin and opium in same proportions as above. Introduce one suppository three times a day. The heat of the body dissolves it. Tincture of myrrh is a good application to cleanse and heal rectal ulcers.

To keep the stools soft, some advise the patient to take, daily, one or two drams of washed sulphur (sulphur lotum)

in treacle (West India molasses). The unwashed sulphur is liable to contain arsenic.

The most common surgical operations for piles are excision, removal by ligature or by the ecraseur (a small chain tightened by a screw), and by application of caustics; none of which are entirely free from danger. The danger arises from hæmorrhage, from sloughing, from tetanus, and from fever and peritonitis.

One method, which has been patented, consists in destroying the bunches by injecting into them a strong solution of carbolic acid. If not carefully done, a bad slough may be the result. Very few persons die of hæmorrhoids, except as the result of an operation. A hæmorrhoidal flux in persons of plethoric habit, may be considered as a safety valve, and may sometimes temporarily ward off a fit of apoplexy. It is better, however, to avoid plethora by a more judicious diet and exercise.

Asthma (labored breathing).

Asthma is a condition recognized by a sense of constriction of the chest, and difficulty of breathing. The profession admit that the cause of asthma is obscure, and the treatment palliative. The causes usually assigned, viz: gout, heredity, irritation, spasm, paralysis of the vagi (pneumogastric or lung and stomach nerves), give no clue to the rational treatment for permanent cure.

Lobelia ad nauseam (to sickening), inhaling the smoke of dried stramonium leaves (Jamestown weed), or of saltpetre paper, are the most approved methods of treatment of the schools. These give at best only temporary relief, and are not curative. Now the temporary relief given by these agents points us to the radical cure. Saltpetre (nitrate of

potash) parts readily with its oxygen (chemical formula KNO 3), and thus temporarily oxidizes the blood. This points to the fact that *venosity* of the blood, or want of oxygen, is a factor in the case. Now in persons of full habit, pressure upon the organs of the chest (heart and lungs) by distension of the abdominal viscera (chiefly the stomach and bowels), will necessarily obstruct the action of the lungs, and cause venosity of the blood.

From this we draw the conclusion that an *abstemious* diet and freedom of the circulation are curative. *Fresh* provisions in preference to salted food will allow a freer exchange of gases in the lungs, because we know by experiment that salt hardens organic tissues and obstructs their pores. In technical language it interferes with "osmosis" (the passage of fluids through animal membranes).

Heated rooms, that necessarily tend to rarefy the air, and inhaling coal gas from coal stoves, also prevent to a degree oxidation of the blood.

In persons of spare habit, salted provisions, and the habit of smoking a pipe, are sufficient causes to develop asthma. Arsenic is also a powerful respiratory depressant. It is largely used by drug doctors for many forms of disease. Drugs are the cause of disease in many cases. A proper regulation of the diet, air, mind and exercise, so as to secure a healthy action of the respiratory, digestive and eliminating organs, will prevent the possibility of any trouble from injurious products of fermentation, especially uric acid, which is believed by some writers to be the direct cause of this complaint. We may sum the matter up as follows, viz: asthma is caused by excess of *venous* blood, uric acid, constipation, distension of the stomach and bowels with food, waste or gases, by catarrh of the lungs, or by inhaling dust and other noxious substances.

Nosebleed (Epistaxis).

Nosebleed is often the natural result of excessive fullness of the blood vessels from excessive alimentation, and in such cases may be looked upon as a safety valve. It is often unnecessarily prolonged by assuming a stooping posture, which tends to obstruct the return of blood to the heart. Raise one or both arms over the head while standing erect, and fill the lungs well with air repeatedly for three or four minutes, and it will soon cease. When bleeding from a wound, it should be checked as in cases of wounds elsewhere.

Dr. Hutchinson recommends for the treatment of epistaxis the plunging of the feet and hands of the patient in water as hot as can be borne. He says that the most rebellious cases have never resisted this mode of treatment.

Heaviness at the Stomach, or Tired Feeling.

When an elderly person feels an ache or pain at the pit of the stomach, it is well to remember that it may be caused by weight of food remaining in the stomach, and will be relieved by lying down in a horizontal position upon the side or face, and, by taking less food, allow the stomach to dispose of its heavy load. Lighter food, change of position, a brisk walk, and more efficient respiration are the best remedies.

Goitre.

Goitre is an enlargement of the thyroid gland. It is often called bronchocele (tumor of the windpipe). This gland is sometimes inflated with air from the larynx, or first ring of the bronchus. Ordinary cases of goitre are ascribed to the use of hard water that contains lime and magnesia, as water often does at the foot of lofty mountains.

It is generally treated in the regular profession by use of electricity, and the compound tincture of Iodine. It is better to avoid the cause when possible, as it is not only inconvenient, but sometimes painful, and difficult to remove.

General Prescription.

No matter what ails a patient, restoration to health will soon follow the *removal of the cause* of illness. Indigestible or irritating substances taken with the food often cause pain or distress. For this reason uniformly reject all indigestible and irritating substances, especially black pepper, cayenne, the skins, hulls, and seeds of fruit; all pieces of bone, gristle, or scales of fish, flesh or fowl, and all burnt food. Articles that cannot be dissolved and taken into the current of the circulation (by osmosis or absorption) are likely to cause trouble in passing, as they must, through the entire alimentary canal. Guard its entrance (the mouth) with diligent care at all times.

Catarrh (literally a flowing down) in Brief.

This is a medical term applied to an excessive secretion and discharge of mucus, more or less thickened and changed, from the mucous membrane; and it is most frequently observed in the respiratory passages, viz: mouth, nose, throat, and lungs. A normal secretion from the mucous membrane is necessary as a cleansing process of the membrane itself, and, also, to carry off waste matters that are foreign to the uses of the body. In catarrh the mucus contains, as foreign matter, common salt and albumen, pointing out clearly the necessity of *fresh* provisions, and a *diminished* quantity of albuminous food. Salt and salted provisions with an excess of albuminous food are the principal immediate causes

of catarrh; but to these two we must add deficient ventilation of our rooms; deficient aeration of the blood in the lungs, the inhaling of noxious gases from burning coal, and a want of adjustment to the needs of the body, of clothing, temperature and exercise. Activity alone will sometimes ward off disease. Either correct external conditions, or fortify the body and mind against them by exercise of the will, and better use of the lungs and muscles.

Burns and Scalds (in brief).

Cold water, if it could be applied in season, might be useful; but after the injury is done, nature herself, under the most favorable conditions we can obtain, must perform the cure. (What we call nature here is the cause and substance of all Being. It is the healing power always and everywhere). When the cuticle or skin is removed, it is well to protect the raw surface from the air. This may be done with some oil, or cream. *Carron oil* has been much used. (It is equal parts of linseed oil and lime water.) "Waxed paper" forms a mild covering that will not stick too closely to the abraded surface.

Corpulence (in brief).

The natural way to *make* fat is to avoid all severe exertion of body and mind, and eat plentifully of the most wholesome and nourishing food. To *reduce* excessive corpulence, reverse the above rules; work hard and eat little of the plainest food. Man is a human animal, and nature's laws reign over man and animals alike.

Dysentery (in brief).

The literal meaning of this word is "bad intestine." The term covers many abnormal conditions of the bowels, all

characterized, however, by numerous and more or less painful and bloody passages. The cause may be traced to some error of diet, use of condiments, unripe fruit, salted meats, and sometimes long abuse of the digestive organs.

Treatment.—An abstemious diet of boiled new milk, mucilage of oat meal gruel, or rice thoroughly cooked and eaten with a little sweet cream.

Drink water that has been boiled and flavored with lemon juice to suit the taste. Keep the whole person and especially the extremities, warm and comfortable as possible without the use of drugs. May use hot applications, or a warm sitz bath. The desire to relieve the bowels should be repressed if it occurs oftener than three or four times a day. The excessive desire is caused by inflammation, and sometimes ulceration of the lower bowel. Keep the skin in good condition as possible by use of the hand bath, always rubbing till the surface is warm and dry. In very bad cases a spoonful of camphor water (not spirits of camphor), may be taken every hour while there is much fever. The camphor serves to counteract infection.

Hiccough (in brief).

Hiccough is generally caused by some irritating matter in the stomach. The same nerve (the pneumogastric) runs to the stomach and lungs, and thus these organs are closely related. Hiccough is a good illustration of reflex action. The sympathetic nerves of the stomach report irritation to the grey matter of the center of respiration at the base of the brain, and it immediately puts in motion an act of expiration which is checked by the closing of the larynx. Sipping of water or lemonade will generally allay the irritation.

Tonsillitis (quinsy) (in brief).

This is an inflammation and enlargement of one or both tonsils. It shows an excess of waste matter in the system and requires better or simpler and perhaps less food, and more use of the lungs to oxidize and decarbonize the blood. Sometimes tonsillitis goes on to suppuration, but *not usually;* and sometimes the tonsils remain enlarged for years. All depends upon conditions chiefly as to food, air and exercise. Chronic tonsillitis usually becomes less troublesome as the child grows older. It was once *fashionable* to cut out a part of the tonsil, as it now is to remove the appendix vermiformis. To correct bad habits is the only true practice.

Puerperal Convulsions (in brief).

Generally caused by an excess of fibrin in the blood. Give hot lemonade, clear the bowels by use of clysters of hot water, and adopt an abstemious diet to free the circulation.

Infallible Sign of Death.

Putrefaction is the only absolute proof of the death of the body. Every apparent function of all the various organs may be temporarily suspended while yet the soul remains in contact with the body; but while vitality remains putrefaction cannot take place.

To Cure Backaches.

Exclude sugar and all sweetened food and drinks from the diet. At the same time practice thoroughly lung gymnastics to oxidize and decarbonize the blood. Sugar makes the blood too heavy if it is used to excess. If necessary consult other parts of this work relating to pain.

Lemonade.

Lemonade is a useful remedy to thin the blood in all fevers, biliousness and liver complaints. Nothing but the pure juice of the lemon should be used. To insure purity let it be home-made and fresh, otherwise citric or tartaric acid may be substituted, as it often is, for lemon juice, and no chemical preparation is quite equal to nature's. To the juice of one lemon add one or two teaspoonfuls of white sugar. The sugar will so increase the density of the juice that the seeds of the lemon will float and may easily be removed. Then add pure water and you have a most refreshing drink. Patients with sour stomachs fancy that anything sour hurts them, and object to lemonade because it is sour. They do not distinguish the physiological acid of the lemon from the pathological acid that arises from the fermentation of food in the stomach. In such cases a goblet of lemonade may excite vomiting, but a second goblet taken on an empty stomach after the vomiting will be kindly received. Let all patients use it freely except those with *cankered* stomachs, and even these may take it when properly diluted. It approaches the nature of a panacea for all inflammatory disorders.

Antidotes (given against).

An antidote is something supposed to counteract the effect of poison. In this sense there are no real antidotes, as there is nothing that perfectly counteracts the effect of poison internally administered. By observing the laws of our being we may in time *outgrow,* in a measure, the effects of poison. A poison may in some instances be warded off, expelled or removed before it has wholly done its work, but there are no perfect antidotes. The substances most frequently given *as*

antidotes are chalk or lime-water for corrosive acids; an oxide of iron for arsenic, and starch, sweet oil or milk for any acrid substance whatever.

Massage.

Massage (from a Greek word signifying "to knead"), is nearly akin to the Swedish Movement Cure. Massage, rubbing or anointing with oil is alluded to by Homer in the Odyssey, by Socrates, Galen, Hippocrates and others. It was used by the Egyptians, by the Chinese, Turks and Russians. By the Sandwich Islanders a similar practice is called "lomi-lomi."

Massage is pactically the exercise of the muscles, organs and parts of the body by the will of another, so that the patient gets the benefit of exercise without expenditure of nervous energy. It is a valuable remedy when properly done by a reliable person, and has a general strengthening and invigorating effect upon the whole system. It is still more effective when aided by correct hypnotic suggestions or agreeable and healthful personal magnetism.

Movable Kidney.

"Movable" or "floating kidney" is a purely imaginary disease, invented, if we rightly judge, by some ambitious surgeon as an excuse for performing an unnecessary surgical operation. With "appendicitis" and hundreds of other *so-called* diseases it will gradually pass out of mind as the people become more intelligent concerning the human body.

The kidneys are situated at the back part of the abdominal cavity just above the hips on either side, and are retained in their position by arteries, veins, lymphatics, nerves, areolar tissue and fat. Without the fat in which they are often imbedded they are naturally more or less movable.

Sweet Breath.

Why does the nursing babe generally have a breath sweet as roses? Is it simply because its life is new? No indeed. It is because it has simple, natural food in moderation. Its little body is not clogged or loaded with waste. Catarrh, decayed teeth, abscesses of the tonsils and lungs, sour stomach, constipation, pyæmia and diabetes, all of which load the breath with foul matter and sickening odors, are only other names for impure food, salted provisions, poisonous drugs, foul air, neglect of exercise and gloomy thoughts. Turn from drugs to *bright ideas* and learn to live, and the breath of the octogenarian will become as sweet as the nursing babe's. Washes and perfumes only temporarily and partially conceal bad odors; they do not cleanse the temple in which we dwell; and until we cleanse and renovate the entire body, within and without, we cannot possibly have what all desire—a sweet breath.

Beauty.

The two magic words that move and charm the world are *beauty* and *love*. These words and qualities are by man associated with woman. It is well for woman to know what these words mean. Let us briefly consider them. 1st, what is beauty?

Beauty is a trinity of symmetry, color and function. These in perfection constitute beauty. For perfect function we require health and grace. Symmetry and color are under the control of the fixed laws of taste. To obtain and preserve beauty is, therefore, in logic an easy thing. But there is no elixir of youth and beauty which we can drain at a draught and bid defiance to the ravages of time. Nothing really valuable is easily and lightly obtained. If we would

see England we must cross the water. Artifice may often conceal deformity and hide the ugly; but beauty, at whose shrine all gladly bow, is obtained and preserved *only* by *self-control* and obedience to Nature's laws. The principles are few, the instruction simple, but the practice must be diligent and unceasing.

Health is the source of beauty, and the loss of beauty is often the forerunner of the loss of health. Beauty has no fellowship with disease. Health and beauty are synonymous. An erect figure is essential to beauty. Round shoulders and curvature of the spine can, with great certainty, be corrected by proper training before middle age. A figure—straight, lithe and graceful—will excuse a multitude of faults. An erect figure is only one of the requisites of a perfect form, and a perfect form is only another expression for what we mean by symmetry—one of the three elements of beauty.

To mould a perfect form Nature requires two or three generations of correct culture. So beauty is no easy haphazard thing after all. Nor is it a fortuitous conjunction of circumstances, but the result, sure and unerring, of three generations of harmonious conditions. Nature struggles ever towards the perfect and the beautiful, but the tendencies of Nature towards perfection are often thwarted by human ignorance and stupidity.

For symmetry of form we require not only an erect figure, but a certain weight of flesh, corresponding to the height. The ideal weight is 115 pounds for 5 feet in height, with 5 pounds added to every additional inch in height for females; and 10 pounds for each inch above 5 feet in males.

Corpulence should not be assailed by drugs, but by regimen. To decrease the surplus of fat avoid as food fats,

starch and sugar, milk and eggs. Eat lean, fresh meat and whole wheat meal bread. Eat little rather than much. Sleep not over seven hours, and never in the day time. Rise early and employ mind and body in active exercise.

To *improve* the weight eat freely of mush with plenty of milk, cream and sugar, butter, fat meat, eggs (especially the yolks), green peas, tapioca, bread and potatoes, and drink coffee or cocoa. Sleep long on easy beds, with a nap in the middle of the day. Avoid pickles and vinegar, severe and protracted exercise, and all disturbing thoughts.

Care of the Hair.

A nice head of hair is the product of good health for two or more generations. Hair is like the grass of the field. It withers and dies on a poor soil. Fresh and healthful provisions, out of door exercises, shampooing and cleanliness are the essentials for good hair. If soap is used upon the head or elsewhere it must be thoroughly washed off with clear soft water, and not be left to dry upon the scalp or skin.

A good brush or the finger ends may be used to keep the vessels of the scalp in a healthy state of activity. Do not dye, bleach or crimp the hair with hot irons.

Causes of Cramp, or Convulsions.

These troubles may be caused by excess of fibrin in the blood,by indigestible food, by worms in the stomach or bowels, by fear or fright, by injudicious use of ice water, by too great venosity of the blood, or by drugs, especially strychnine.

Treatment for Canker or Ulcers of the Stomach.

Feed regularly every four hours through the day a gill, or small quantity of milk and barley water, or an equal quantity

of oyster broth. To give the stomach an opportunity to heal, it is necessary to avoid distention and irritation.

The Smoking Habit.

Substitute mullein leaves for tobacco; at first one-fourth mullein for a few days, then one-half, and finally three-fourths, then stop altogether. This is a safe and easy cure.

Heart Disease.

The natural remedy for heart disease is pure food and drink with open air exercise. A few deep and full inspirations always calm the action of the heart, provided the soul is tranquil.

Pharyngitis (sore throat).

Pharyngitis may be associated with tonsillitis or laryngitis. It may be caused by neglecting to aerate the blood, or by inhaling noxious gases like carbon dioxide from a coal fire.

Any stagnant or thickened condition of the blood may lead to inflammation in almost any part or tissue of the body. Depuration of the blood, by light diet, with local use of mild antiseptic remedies, form the proper treatment.

The Pulse.

The pulse is about one hundred and twenty at birth. It gradually diminishes until it reaches about ninety at the age of eight years. In adult life it is sixty-five to seventy-five, and in old age not much over sixty. A difference is made by changing from a lying position to sitting, and from sitting to standing.

The pulse is felt by placing the first two fingers upon the

radial artery at the wrist. The following are the principal variations of the pulse:

Frequent Pulse.—A pulse diminished in force, increased in frequency. A characteristic of debility.

Febrile Pulse.—In fever, the rate of pulsation, and usually the force, is increased.

Feeble Pulse.—A pulse that is readily extinguished by pressure with the finger. Indicative of great debility or exhaustion.

Slow Pulse.—An unnaturally slow pulse occurs in cases of brain poisoning or apoplexy; it is present in compression of the brain from fracture, and in unconsciousness from opium or liquor.

Irregular Pulse.—A pulse which is irregular in frequency and force. Is very often the result of the use of tobacco and of strong tea and coffee.

Treatment for Pneumonia, or Inflammation of the Lungs.

Give hot lemonade freely; apply, if necessary to equalize the circulation, hot bottles or hot compresses, and encourage more efficient use of the lungs. An abstemious diet in all cases of plethora is advisable. These are the essentials.

Reasonable exercise with proper rest will assist the cure.

Hoarseness, or Cough.

Beat well the white of an egg with a dessert spoonful of white sugar, then mix well with the juice of a nice lemon. Dose one teaspoonful every hour. With proper attention to clothing, hand bathing, breathing, diet and exercise, this remedy is infallible. It cures quickly, pleasantly and safely.

Orchitis (Inflammation of the Testicle).

Orchitis is readily recognized by the pain and swelling of the part. Apply wet compresses of such temperature as is most soothing; restrict the diet to lemon juice and water for a day or two, or until the pain and swelling is much reduced; correct the condition of the colon by use of the fountain syringe if necessary; and live abstemiously till well. Orchitis is apt to follow the use of acrid substances injected into the urethra for the treatment of urethritis (inflammation of the urethra). Urethritis may be avoided altogether by proper cleanliness at all times, and may be cured by simple washes of toilet soap. Avoid the use of all acrid substances.

Parasites.

A parasite is something that feeds, lives, or grows upon some other organism. The term is applied to plants or animals that live on the bodies of other plants or animals. The mistletoe that grows on fruit trees, and sometimes on the oak, thorn, and ash, is a parasite. The itch mite (acarus) is a parasite that burrows under the skin sometimes when the skin is neglected, or has lost its vitality by use of salt, morphine or other poisonous drugs. It is well to keep the dead scarf skin removed by use of baths and towels.

The vine is sometimes attacked by a great variety of microbes (microscopic life), and in malaria and cholera cases numerous kinds of parasites are found.

This is on the principle that crows and buzzards may both feed on the same carcass. Microbes may be the cause of infection where infection is possible; or more properly speaking, they are one of the effects in the line of sequence from cause to effect, but in no true sense are microbes the cause of

disease, for *infection is not possible in healthy bodies.* Ever the greater controls the less; and the mind is greater than all material forms.

Destroy the parasites, and more will come, so long as dead or waste matter remains on which they feed. "Where the carcass is, thither will the eagles be gathered together."

Trust No Secret Remedies.

Homeopathic remedies are generally considered safe, but this idea has proved delusive. Count St. Antonio of London is reported to have died in two hours from taking three doses of these pellets at once. They proved to be strychnine.

La Grippe.

What is it? Some think it is an epidemic like Influenza, which was once supposed to be due to the influence of the stars. In our opinion the cause of disease is not so far off. A famine, or the sudden death of thousands of animals, or human beings whose bodies are left unburned or unburied, may render the air for a season pestilential, but the air itself is life-giving and salubrious. If we mistake not, the mortality of La Grippe is due largely to antipyretics and other poisonous drugs administered as remedies. It is the grip of the drug doctor upon the vitality of the patient. Air, exercise and wholesome food are the best preventives and the best remedies.

Fasting.

The instinct of the brute creation leads them to fast whenever they are sick. Howard, the philanthropist, used often to fast; so have many others not only as a means of recovering health, but also as a religious duty. Yet fasts may not

be too long continued. The omission of at least a single meal when the appetite is sated is always beneficial. If the appetite is poor, time and outdoor exercise or sports will surely bring it back. Fasting is the best appetizer and exercise is the best tonic. But bear in mind that fasting is not necessarily starvation. It may lead to starvation if prolonged beyond reasonable limits, but properly understood and applied fasting is a remedial measure of no small importance.

Beauty as an Incentive to Action.

A certain flowering evergreen of Europe (the Furze) awakened such emotions of delight and devotion in the breast of Linneus on first beholding it that he fell on his knees and prayed, enraptured with its golden beauty. The feelings of the great botanist before this flowering shrub are common to every human breast when pervaded by a sense of the beautiful, and to exhibit in fullest measure the essence and nature of this divine quality is to become the greatest benefactor of the race. A fairer flower than any which Linneus had ever seen in garden or meadow bloomed in the family of the chief physician of Fahlun, the capital of Dalecarlia. This physician tenderly loved his daughter. He conceived also a liking for the young Swede of ingenuous bearing and so devoted to science; but more cool and considerate than the youthful lovers he postponed the nuptials with the promise that his daughter for three years should remain unmarried, and if at the expiration of that period his condition in life was suitable, his sanction should be readily given. To merit the attachment of one so worthy Linneus resolved to strain every nerve in the path of learning and distinction; and to this fairer flower that bloomed in Fahlun the science of Botany is indebted for many contributions,

and one of her chief expounders for a reputation that can only perish with the science itself. To make ourselves beautiful in person, in mind, in affection, is the legitimate aim of existence. For this purpose the prizes of life are placed before us; wealth and fame are but soap bubbles to induce us to expand our lungs in blowing them.

New Drugs.

We must remind our readers that the "investigation of new drugs," or as they are more frequently called "new remedies," as now practiced by many members of the medical profession, means in common language *experimenting with human life* for the sake of finding out, for the thousandth time, that all drugs are poisonous in proportion to their power to disguise or extinguish the true and natural symptoms of any abnormal or wrong condition of mind or body.

To Reduce Obesity.

The simplest and surest rule is to eat only of one kind of food at any one meal, and drink only water, lemonade, orange juice or buttermilk. Have no mixed dishes. If you have bread have nothing else for that meal. In applying this rule you may choose any single article from the following, viz.: lean meat, fresh fish, except salmon; one egg slightly cooked; brown, whole wheat-meal bread or gluten bread; onions, cabbage or cauliflower, grapes or cooked sour apples, strawberries, blackberries and peaches. Reject all fat, starch and sugar, and all articles of food that contain them largely, such as rice, potatoes, butter, pies, cakes, puddings and all condiments.

The lemonade is to consist of lemon juice and water, as sugar is excluded.

Take only three meals per day. Take a reasonable amount of exercise every day and lead an active life.

This regimen will regenerate the system, especially if the diet be vegetarian. It will cure diabetes, and what is usually called Bright's disease.

Mental Phenomena.

Says Edward Spencer: "I once saw a strong and hearty man grow weak and faint, so that he was forced to go to bed, under the apprehensions produced in him by the drumming of some pheasants which he heard while plowing in his field, and which he mistook for the palpitation of his own heart."

During the reformation in Lithuania, Prince Radzivil was presented, at Rome, with a box of precious relics from the Holy Father for his devotion. They were intrusted to a young man for safe keeping. On the arrival of the Prince at home, the relics were used by the monks for the cure of a demoniac. The success was instantaneous; but upon inquiry the young man confessed that he had lost the genuine relics on the way, and supplied their place with the bones of cats and dogs from the highway, and put them into a box, the fac-simile of that which was lost. But the cure was genuine, through the force of the imagination.

Paracelsus said plainly that the incredible might be performed at any time, through the combined agencies of imagination and faith. "If the command be combined with faith, the magically divine spirit in us has a superhuman sphere of action, which extends itself as wide as our thoughts, our imagination and our faith."

Mesmer could persuade the eye that black is white, and the stomach that sweet is bitter. The doctor, by his presence,

can sometimes do as much. It is his office to touch the springs of hope and confidence, to quiet the secret fear and revive the drooping heart.

Materia Medica.

Materia Medica is not a scientific term; and it is not only unscientific, but it is also incongruous and misleading. It implies that *material* things have healing power, whereas all healing power resides in spirit or what we usually call vitality, or principle of life.

Remedies are useful in the treatment of patients, but they are not necessarily material, and even those that are material (dead matter) have of themselves no healing power; are not in themselves active; hence in Etiopathy we use the term domestic remedies for such material things as are convenient, useful or necessary as temporary expedients in the treatment of the sick, because, as we hold, all necessary or useful material agents for the care and treatment of the sick should be known in every household.

Boils and Abscesses.

A *small* boil is commonly called a pustule; a *large* boil, or cluster of boils, is called a carbuncle; and an abscess is any abnormal cavity filled with pus, which is chiefly the product of the broken down tissue that became inflamed. The term, abscess, however, is only applied to large abscesses. Abscesses, carbuncles, boils, and pustules are all effects of the efforts of nature to get rid of poisonous, dead, foul or waste matter that cannot be thrown off by the normal action of the eliminating organs (lungs, skin, bowels and kidneys). In ordinary practice, pustules are generally allowed to break of themselves; boils and carbuncles are frequently lanced, or

opened; but sometimes poulticed and allowed to break like pustules, while abscesses are generally opened by the surgeon, and the pus removed if it can be readily found.

Abscesses are always the result of inflammation, and inflammation is the result of thick, impure and stagnant blood; we must, therefore, make all conditions favorable for purifying the blood, and invigorating the nervous energy. The diet, air, exercise and baths are the important things to regulate. There is no good place for a boil or abscess; wherever it is, the patient wishes it somewhere else. The best old school remedy is the following, viz: sulphide of calcium, five grains; epsom salt, one dram, and water two ounces. Mix and give one teaspoonful three times per day.

Right living is the only reliable remedy.

Overheating the system, chilling or freezing the blood, or crowding the system with many *raw* apples, or pears, or use of many salted meats, or whatever clogs the system with waste matter beyond the daily capacity of the depurating (or eliminating) organs, usually gives rise to inflammation, boils, and abscesses. Avoid, if posible, all causes of disease.

Mercury (quicksilver).

Mercury is the king "alterative" of *allopathic* practice. The term alterative (producing some change) betrays the ignorance of the profession in regard to the nature of such drugs, but numberless experiments made upon unsuspecting patients for centuries have demonstrated the fact that mercury is a destructive *poison*, as the term applied to one of its preparations (corrosive sublimate) plainly indicates. One of the best known effects of mercury upon the system is called "salivation" (a profuse discharge of saliva). It produces loosening of the teeth, swelling of the tongue and other

bad symptoms. Other effects of mercurialism, not so well known to the public, are sterility or barrenness, paralysis, rotting of the bones, producing *bone cancer* and a stench from the nose which is technically called "ozæna," and other terrible symptoms well known as *"tertiary syphilis."*

To call mercury or any of its numerous preparations a medicine is a misnomer. It is a poison, always injurious, and cannot be used with safety.

Mercury is valuable only in the arts and for the destruction of vermin and parasites; *as an internal remedy for disease it has no rational use.* Many suppose it has been already abandoned, but it still holds a formidable place in the Materia Medica of the regular schools. Dozens of pages are given in the *Dispensatory* to its various preparations. Quicksilver, calomel, corrosive sublimate, blue mass, blue-pill, Hydrargyrum cum creta, mercuric iodide, Turpeth mineral, cinnabar and mercurius vivus are only a few of the names of its many preparations. It was formerly much used in typhoid and malarial fevers, and is still regarded by some physicians as almost a specific in syphilis—a terrible mistake.

Workers in mercury are subject to chronic poisoning. If it is to be given in any form as an alterative or for any other purpose whatever the patient should at least know *what he is taking.*

Dr. Sweetser in his work on consumption states that calomel (chloride of mercury) has been often ranked among the causes of consumption. It excites inflammation, dropsical effusions and thickening of serous membranes.

Dr. Mathias says that the mercurial disease is more destructive than Venereal disease. It has wrought great havoc and untold suffering among millions of people. Let its use as an internal remedy cease.

CALOMEL SONG.

(This song is not original, but is here inserted for preservation.)

Physicians of the highest rank,
(To pay their fees we need a bank),
Combine all wisdom, art and skill,
Science and sense in calomel.
When Mr. "A" or "B" is sick,
"Go fetch the doctor, and be quick."
The doctor comes, with much good will,
But ne'er forgets his calomel.
He takes his patient by the hand,
And compliments him as his friend;
He sits awhile his pulse to feel,
And then takes out his calomel;
He then turns to the patient's wife,
"Have you clean paper, spoon and knife?
I think your husband might do well
To take a dose of calomel."
He then deals out the precious grains—
"This, ma'am, I'm sure will ease his pains;
Once in three hours, at sound of bell,
Give him a dose of calomel."
He leaves his patient in her care,
And bids good-bye with graceful air.
In hopes bad humors to expel,
She freely gives the calomel.
The man grows worse quite fast, indeed,
"Go, call for counsel,—ride with speed."
The counsel comes, like post with mail,
Doubling the dose of calomel;
The man in death begins to groan—
The fatal job for him is done;
His soul is winged for heaven or hell,
A sacrifice to calomel.
Physicians of my former choice,
Receive my counsel and advice;
Be not offended, though I tell
The dire effects of calomel.
And when I must resign my breath,
Pray, let me die a natural death,
And bid you all a long farewell,
Without one dose of calomel.

Physical Diagnosis, or Signs of Disease, and What They Indicate.

Cold Sweats indicate great prostration, fear, or depression of spirit.

Hot and dry skin indicates fever, mental excitement, or excessive use of salted provisions.

Ringing in the ears indicates nervous debility, or use of quinine.

Inability to rise indicates loss of strength, paralysis, rheumatism, inflammation, fracture or dislocation of one or more bones.

Inability to lie down indicates asthma, pleurisy, or dropsy of the abdomen.

Coma (deep stupor) indicates compression of the brain, as in apoplexy, epilepsy, or effect of alcohol, opium, and other narcotics.

Deafness indicates want of attention, wax in the external ear passage, paralysis of the auditory nerve, or effect of quinine or other drugs.

Pupil contracted indicates inflammation of the brain, effect of opium or other drugs.

Pupil dilated indicates effect of belladonna or other drugs, or paralysis of the optic nerve.

Muscae volitantes (floating specks in the field of vision) indicate want of transparency in the humors of the eye; a symptom of dyspepsia.

Pain at the end of the urethra (without soreness), indicates gravel, or stone in the bladder.

Pain of the abdomen that is diminished by pressure indicates wind colic; if *increased by pressure,* peritonitis (inflammation of the bowels, or peritoneum.)

Vertigo (dizziness) indicates derangement of the nerves

and circulation of the blood, depending often on errors of diet.

Pallor of the ears, tongue and gums indicates loss of blood, or poverty of blood.

Blue line along the gums indicates metallic poisoning.

Gums and other parts disposed to bleed easily indicates scurvy—the effect of a diet containing an excess of salt and salted provisions.

Bitter taste indicates errors of diet, or use of drugs.

Loosening of the teeth indicates the use of salt, baking powders, or mercury, either in food or as medicines.

Excessive thirst indicates the excessive use of salt, sugar, or other matters that require water to dilute them or wash them away; or, of hemorrhage that drains the blood vessels of their contents.

Yellow tongue indicates torpor of the liver, constipation, and other proofs of errors of diet, want of exercise, or unhealthy states of mind.

Brown or dark-colored tongue indicates contamination of blood as the effect of opium and mercury, or of chemical decomposition in the stomach and bowels.

Livid tongue indicates defective aeration of the blood.

Tremulous tongue indicates deficient nerve power, or clogging of the system, as in the early stages of some fevers.

Red tongue usually indicates the approach or presence of eruptive fevers.

A dirty-white tongue is often seen in pneumonia (inflammation of the lung or lungs), but indicates more or less derangement of digestion and defective elimination.

A peculiar strawberry-colored tongue is seen in scarlet fever.

Excess of fibrin in the blood indicates excessive alimentation, especially of albuminous food (animal flesh, eggs, peas, beans, etc.), and often gives rise to inflammatory disorders.

Uric acid in the blood and urine indicates fermentation of waste products in the system, and impaired condition of the eliminating organs. It gives a strong tendency to rheumatism, gout, neuralgia, asthma, headache, etc.

Excess of urea in the blood indicates impaired action of the kidneys, whose office it is to eliminate the urea. This impaired action of the kidneys is undoubtedly due to errors of diet that often lead to what is called Bright's disease.

Palpitation of the heart indicates mental excitement, or dyspepsia.

The pulse when accelerated indicates what is called "fever," especially when attended by rise of bodily temperature; *when intermittent* it usually indicates impaired digestion; *when irregular,* indigestion, with obstructions in the circulation; *when small and rapid,* great prostration from wasting disease or hemorrhage.

Foul breath indicates neglect of the mouth and teeth, improper diet, constipation, neglect of exercise, or the use of drugs, alcoholics, and tobacco.

Stertorous breathing (snoring) indicates oppression of the brain and nerves.

Baking Powders.

Some physicians of note have come to the conclusion that the cereals, including wheat, oats and maize, are more or less unwholesome food; and one physician ascribes the "tartar" that collects on the teeth, and the "arcus senilis" (senile arch) sometimes seen around the pupil of the eye of elderly people, to the use of cereals. We are inclined to think that

the objections made to the use of cereals are chiefly due to the use of "baking powders." Freshly made yeast is preferable.

Eruptive Disease.

A hot pack may be used, if necessary to bring out the eruption. To give it, wring a sheet or flannel blanket out of hot water (115° Fah.) and wrap it about the naked body of the patient. Keep him in the pack till he sweats freely, then *rub him dry,* and cover with dry clothing. In all cases of eruptive and zymotic disease—measles, scarlet fever, small-pox, diphtheria, typhoid fever, erysipelas, cholera, etc., an antiseptic remedy may be useful. One or two drops of spirits of camphor on sugar, or a spoonful of camphor water may be given daily or oftener for two or three days, according to the malignancy of the case.

Inversion of the uterus is caused by meddlesome interference of the attendant in nearly all cases. The natural action of the uterus itself cannot invert it. It commonly occurs from an attempt to extract the placenta from the fundus of the uterus by traction of the cord. Not much traction, or pulling of the cord, should ever be made, nor should much force be used externally over the fundus (upper and broader part) of the uterus in practicing Crede's method of expelling the afterbirth. If any compression is made over the uterus, let it be down with the open hand, and not with the fist.

Hemorrhage in childbirth is generally due to mismanagement. Fear or anxiety on the part of the patient is a *predisposing cause.* She should know that childbirth is a perfectly natural process and in all cases of good health free from pain and danger. The danger arises chiefly from ignorance on the part of both patient and attendant. The prin-

cipal and specific causes of uterine hemorrhage are fear, laceration or dilation of the cervix by use of instruments, forcible removal of the afterbirth, or a tight bandage around the body. There will generally be some escape of blood with the passage of the placenta or soon after. Confidence on the part of the patient, and a vaginal injection of hot water (115° Fah.) are the best remedies for post-partum hemorrhage. The old treatment with ergot is worse than nothing. A few drops of tincture of ipecac to relax the system is a more sensible remedy.

Science and Religion.

Science has been often called the handmaid of religion. Why? Because it leads inevitably to what may be rightly called scientific religion. Religion is not what many suppose it to be. It does not consist of professions, ceremonies, nor rituals. It is as the word itself implies, a "reunion," or *reuniting*. By ignorance only man is separated from the Creative energy which is everywhere manifest to the scholar. And if man is separated by ignorance, *knowledge*, or an acquaintance with nature, will *reunite* man consciously with his Creator, whom we call God (the Supreme Good). To become acquainted with God through the phenomena of nature and the study of the human soul is to be religious. And no where else is God made manifest, to the same extent. as in the body of man and the faculties and power of the human mind. If man is made in the image of God, by the *study of the image* we become acquainted with the original —Omnipotent Power, Love and Wisdom.

Soap.

Soap is said to be an invention of the Gauls, who formerly lived in what is now called France. Like everything else, soap

is good in its place, but more or less bad when out of place. It is not particularly good for the skin, but is largely used; in fact, soap has come to be considered almost a virtue. We do not write to extol it, but to protect the skin; not the skin of animals, which is made into harnesses and shoes, but the skin of man, while it still forms his integument, or outer covering. Without oil, well rubbed in, after washing with soap, shoes and harnesses would soon be spoiled. Soap is good for removing grease and dirt, but is injurious to the delicate tissues of the skin. If used as a necessity for cleanliness, its use may be wisely followed by an application of lemon juice or a little cider vinegar, to neutralize any soap that may remain. We recommend the use of soap, but only as a necessity. Avoid it when you can and be clean. Water alone will often suffice. The use of soap is undoubtedly the principal source of chapped hands and some other forms of skin disease. Ammonia injuries the skin if much used. It is a strong alkali, and removes the cuticle. If soap is used upon the skin let it be either *thoroughly washed off* with an abundance of soft water, or else neutralized by the application of some mild vegetable acid.

There is much difference in soaps. Soft soaps are potash soaps and contain an *excess* of alkali. Hard soaps are soda soaps. White hard soap is made of olive oil and caustic soda. The best Castile soap is made in Spain and is pure white. The clouded is mottled with vitriol. Much of the Castile soap sold in this country is loaded with barium sulphate. Soft soap is usually made by boiling the ley of wood ashes with animal fats.

Instances of Old Age.

Epimenides of Crete is said to have lived 157 years; Zeno, the stoic, attained nearly to the age of 100 years; Terentia.

the wife of Cicero, lived to the age of 103; J. Effingham, Thomas Parr, and Henry Jenkins, all of England, lived, respectively, to the ages of 143, 152 and 169 years; Hippocrates was 109. Islands and peninsulas of temperate climes are cradles of old age.

The Living Temple.

By nature we love and admire the beautiful. Now, there is naught on earth so beautiful, so interesting, as man; and man is certainly most beautiful, and at the same time most useful when in the enjoyment of the fullest health. I have sometimes thought that he was the greatest benefactor of his race who carried with him as his earthly dwelling place the purest, the best developed, the most perfect body. Beauty hath power to charm, it lifts us to higher levels, high attainment, stimulates aspiration. Nature is wonderful in all her works; most wonderful in man. "Know ye not that ye are the temple of the living God."

The Lost Key Found.

The profession has lost the key to the science of medicine. They are greatly puzzled over the nature of disease. They only know it is the antithesis of health. But they do not know what health is, and in attempting to define it they get it confounded with *life* itself, and are lost in the mystery of being. They then falsely conclude that disease is something that can be destroyed with drugs, or can be extirpated with the surgeon's knife. All this is unscientific.

We must come back to the simplicity of truth. We must use, instead of drugs and scalpels, logic, philosophy, and common sense. These are the remedies that will lead to health. Health is a process of education, growth, and de-

velopment. To prove this, read the word without the last two letters—thus, heal (th). Healing is the root idea of health, and healing implies a process of growth or repair. Every person is healed only when he becomes possessed of sound ideas in regard to physical life.

Drugs cannot teach, and therefore cannot heal us. Ideas are curative, and therefore ideal Medicine is the true scientific practice. We must teach.

At present the metaphysical and the regular, or so-called scientific, schools are widely apart; so widely in fact, that they do not recognize each other. They form the extreme wings of truth. Neither can be properly taught and correctly applied without the other.

Physiology, as taught in medical schools, ascribes to matter, powers which belong only to mind or spirit. The intelligent cause of all action has been wanting. We have now found it, and may live constantly in the presence of a Divine Architect.

Materia Medica has been a stumbling block in the profession, and the cause of much loss of life because there was no intelligent connection between the supposed remedy and its supposed effect. The *modus operandi* of drugs was never understood.

Therapeutics itself has been blind, because the real curative agent has not been recognized. It is mental and invisible.

Pathology is of little or no value, because based on false assumptions, viz.: that disease is a multitude instead of a unit; that it has a material as its ultimate cause, instead of a mental, and that the phenomena of pathology are something entirely distinct from physiology. None of these points can be sustained in science.

National Medicine.

A currency issued by the general government, based on the credit of the entire people, and having for its unit standard—not gold or silver, or any other commodity, but a unit of labor, forms as perfect a currency as can be desired. Such a currency is the ideal currency of a republic.

The full, legal tender treasury notes issued during the war were an approximation to this ideal currency. They only lacked a correct standard to become the best currency that can be issued. It is an easy matter to establish our finances on a just and satisfactory basis, provided there is a disposition to do so. The privilege of issuing the currency is so great that the humblest citizen cannot be justly deprived of it; in other words, it is the sole function of the general government, acting for the entire people. In justice, all must share in this great right.

Gold and silver can never be made a safe basis for the circulation, *nor can any other commodity,* for the simple reason that commodities, like gold and silver, may be stolen or lost.

The *only possible basis* for representative money, *is credit,* and there is no credit so good as the credit of the entire people. The taxing power of the government is sufficient to ensure the circulation of treasury notes made a full legal tender, and a proper standard of value will forever prevent such notes from depreciation.

A unit of labor is the only possible correct standard of value. The value of all commodities must change more or less, depending upon demand and supply. But the unit of labor is unchangeable. Time never varies, or if it does it is imperceptible in a thousand years. Time is the only unit which correctly measures labor, and labor is the one economic

factor in the production of wealth. The earth, air, and water —all natural opportunities, belong not to individuals or corporations, but to man as a whole. Justice must reign before we can have enduring peace.

Surgery.

It is time to call a halt in surgery. There is too much cutting done. The presiding genius that knits the broken bone is much the best performer, and occasionally, but rarely, needs mechanical assistance. Still the cutting will go on so long as patients will submit to it. The evil must be checked, not by pointing out the error to the profession, but by taking away the victims—the uninformed. The well need not a physician, and the well-informed do not often submit to surgical operations. It is the uninformed—the one who leaves everything in regard to health to her physician—that most frequently becomes the victim of vivisection. Scarcely an organ in the body, including the heart and lungs, is safe from the surgeon's knife to-day, unless the patient himself has some medical knowledge, so as to judge for himself. Surgeons may not be dishonest, they may not be wilful homicides, but they are often strangely biased, or strangely ignorant of better methods.

The cutting out of both ovaries is called double ovariotomy. It is also known as Fehling's operation, or, again, bilateral ovariotomy. It is now resorted to empirically (as a mere experiment), for the cure of osteo-malacia. The latter is simply softening of the bones from a loss of their earthy matter, and the consequent reduction to a cartilaginous state. A late writer says that the exact nature of this disease "is not known, and consequently there can be no rational treatment. We must, therefore, treat it empirically." He therefore resorts to ovariotomy, because osteo-malacia is considered a

"mother's disease." Now, there is just a *little* common sense in tracing this softening of the bones to pregnancy. A certain amount of bony matter is required for the fœtal skeleton, and some women say that every pregnancy costs a tooth. But even on this hypothesis, which the writer does not claim, we see no earthly reason for performing ovariotomy. There are other ways, and much more rational, for overcoming osteomalacia, or softening of the bones. A proper change of food would supply the necessary bony or earthy matter for gestation. A little more gluten, or whole wheat meal bread would probably allow pregnancies to go on without inducing this disease. But, if not, there is certainly a more rational way of preventing pregnancies than by sterilizing or unsexing the woman. Every man and woman ought to know by means of a suitable medical education the proper way to control and use the sexual function, as well as those of all other organs and parts of the body. A medical education — if only rational—is much better than any surgical operation whatever.

The loss of the ovaries is, of course, irreparable to woman, and although she may for a year or two fancy, or be made to believe, that God's work has been improved by the surgeon's knife, she soon learns her mistake and wishes she had earlier learned the better way.

Instinct, or Intuition of Birds.

It is said that the birds took flight from the city a few days before the recent cholera epidemic in Hamburg. In 1884, when the cholera was raging in Marseilles and Toulon, the birds of those cities took refuge in Ilyres till the cholera subsided.

Still another instance of the same kind occurred during the summer of 1872, when all the swallows in Presemsyl, a town

of Galicia, deserted the town during the presence of cholera. Birds are fond of pure air. A canary bird will die if confined for twenty-four hours in a small room recently painted with lead.

We cannot reasonably expect to live free of disease while we continue to pollute our rivers and harbors with all the filth and refuse of great cities. Cleanliness requires either that the refuse be consumed, or returned to enrich the cultivated fields.

Health More Valuable Than Gold.

An Arab, wandering in the desert, and for three days without food, became apprehensive of famishing, when coming to a spring of water where the caravans encamp, he espied upon the sand a little leathern sack. "Allah be praised!" cried he, "it is, I think, a little flour." Hastening to open it he exclaimed in disappointment, "How unfortunate I am; 'tis only gold-dust."

This historical incident plainly illustrates the fact that gold, for which the great majority of men so earnestly strive, is not always the most valuable, even of earthly possessions. Life, the sole medium of all other blessings, is the one great boon which the wise and thoughtful of all ages most highly prize.

"O, Thou, whose love is changeless, both now and evermore,
Source of all conscious being, thy goodness I adore;
Lord, I would ever praise Thee for all Thy love can give,
But most of all, Oh! Father, I thank Thee that I live."

And next to life itself, and "All that a man hath will he give for his life," is that condition of the body known as health. "A clear bright eye that can pierce the sky with the strength of an eagle's vision, and a steady brain that can bear the strain and shock of the world's collision; a well-knit

frame with the ruddy flame aglow, and the pulses leaping with the measured time of a dulcet rhyme—their beautiful record keeping; a rounded cheek where the roses speak of a home with seraph wardens; and a chest so grand that the lungs expand exultant beneath their burdens; a breath like morn when the crimson dawn is fresh in its dewy sweetness; a manner bright, and a spirit light with joy at its full completeness; oh! give me these nature's harmonies, and keep all your golden treasures; for what is wealth to the boon of health and its sweet attendant pleasures."

Intermittent Fever.

This complaint is characterized by paroxysms of fever which recur at intervals of more or less regularity; and between the paroxysms there is usually a complete intermission.

Malarial fever, chills and fever, and fever and ague, are only other names for the same thing. It is generally understood that malarial fever is caused by malaria (bad air or miasm), and the specific cause is said to be a fungous spore, or germ (the Bacillus malaria) that floats in the air of certain districts contiguous to swamps or low marshy land.

Frost destroys the vitality of this germ. But the germ alone cannot be the cause of the disease, since not all persons who breathe the same bad air contract the disease. Those only contract it who are, in common language, "bilious." If the blood is pure, and the circulation free and vigorous, no person ever gets chills and fever. It is only those whose digestive organs have become more or less clogged, and in whom the blood is more or less thick and sluggish, that contract malarial fever.

Any excess of fibrin, or bile, or of other waste matter in the blood, tends to render the circulation sluggish; and a

sluggish circulation in any person invites disease. No fungous growth, or germ, can take root and grow in a swiftly flowing stream; but a stagnant pool, or swamp, becomes the natural abode of many lower forms of life.

The paroxysms of intermittent fever generally occur with more or less regularity once in every one or two days The daily form is termed "Quotidian" (often as the day); a paroxysm every other day—*i. e.,* first and third *(tertius)*, is a "Tertian" ague; and a fever of great irregularity is termed "Dumb" ague.

Each paroxysm of the true type, according to the books, is expected to consist of three stages—cold, hot and sweating. The chill occupies—to be scientific—thirty to sixty minutes. The headache, lassitude and nausea that generally precede the chill are termed *prodromes* (forerunners).

The hot stage, during which the temperature of the body rises several degrees, begins gradually and continues from one to ten hours. The sweating stage that follows comes on gradually, and continues from one to four hours; then follows the intermission. The next paroxysm may occur in a few hours, or, in one or more days. Its period of return gives name to the variety of the fever—Quotidian, Tertian, Quartan, Dumb ague, etc.

The regular, or *Allopathic treatment* for this complaint has usually been to administer calomel (mercuric chloride), quinine, arsenic and iron. In fact, quinine has usually been the main reliance. It is given in large doses, twenty to twenty-four grains, three or four hours before the expected paroxysm, but always after a brisk purgative. After the paroxysms are thus "broken up" by this treatment, the rule is to give, for a month or more, thrice daily, arsenic, in the form of Fowler's solution, or else Tincture of Iron; and in

many cases *the constitution of the patient is thus "broken up,"* as well as the paroxysms.

We ought to say that the cold stage is often met, by the so-called regular physician, by the hypodermic injection of morphine, pilocarpine, or spirits of chloroform (see Hughes). "Relapses being common," says this author, "quinine should be given on the *second* or *third* day, *fourth* to the *sixth, twelfth* to the *fourteenth,* and *nineteenth* to the *twenty-first* days."

In regard to quinine, one author (Hare) says that "ten to fifteen grains in one dose are generally sufficient in the eastern and northern states, but as much as twenty to forty-five, or even sixty grains, may be required in the southern parts of the United States and elsewhere." As the stomach will rarely withstand sixty grains of quinine, he recommends that very large doses be given partly hypodermically and by the rectum, as well as by the stomach.

This author admits that some persons "are in reality poisoned by small doses of quinine. In these cases sudden, complete, but temporary blindness is often met with. In other cases complete deafness asserts itself, 'while skin eruptions' frequently appear, and severe epistaxis may ensue after so small a dose as four grains;" yet, strangely to say, sixty or even seventy grains are sometimes recommended.

Now, if quinine has the effect to produce both blindness and deafness, we need not be surprised that in large doses it may at least *obscure* chills and paroxysms of fever. It evidently deadens the nerves, and that is not a philosophic cure. The only rational cure of this, and all disease, is to remove the producing cause. What, then, is the cause of chills and fever? Evidently, clogging of the blood, which allows of fungus vegetation, or development of spores in the blood.

The true remedy will be to cleanse the blood of all obstructing material—any excess of fibrin, bile or other waste matter. This can be done for the most part by the natural action of the eliminating organs, if we *stop taking on* unnecessary and injurious material. Mild vegetable, or saline cathartics, and the free use of water internally, may be used to cleanse the system.

The paroxysm must be regarded as an effort of nature to free the circulation, and any paroxysm which is only partially successful, or successful only temporarily, must necessarily be followed by successive efforts just as often as the obstructions reach the limit of natural endurance. Each onset of fever and sweating may temporarily give relief, both by oxidation of waste material in the blood and by depuration through the skin. Nature's method is the natural cure.

An intermitting spring, working on the principle of the siphon, illustrates the reaction that takes place in intermittent fever. The obstructions in the circulation increase until the vital force is roused to resistance, and the attack will return sooner or later, depending upon the rapidity with which the blood becomes clogged. One author says that "coldness and chills are owing to the blood principally occupying the veins." Now, this is another way of saying that when chills occur the blood is principally *venous* blood; and this again means that the blood is not properly arterialized in the lungs—not properly oxidized. If this be true, the real remedy for intermittent fever is to *depurate and oxidize the stagnant and impure blood.*

Let the sufferer abstain from the use of butter, fat meat, rich gravies, and all kinds of greasy food, and endeavor to cleanse the system and invigorate in every way the energy of the entire organism.

Long and Short Necks.

The difference in length of neck in different individuals depends upon the position of the collar bones (or clavicles) and the development of the lungs, and not upon the number of vertebræ in the neck, which is the same in all. Individuals of large breathing capacity have, as a rule, short necks, and generally broad shoulders, while persons subject to pulmonary complaints have long necks because their lungs have not been well developed and the collar bones lie at a lower level. Nature speaks in unmistakable language to those who study her methods.

Clinical Thermometer.

The object of a clinical thermometer is to ascertain as nearly as possible the heat of the blood. The normal heat of the blood is 98.6 degrees Fahrenheit, which corresponds to just 37 degrees Centigrade. The latter scale (Centigrade) has 100 degrees between the freezing and boiling points, while the former (Fah.) has 180 degrees between the same two points, so that five degrees of Centigrade is equal to 9 degrees of Fah. The freezing point of Fah. is marked 32, while the same point on the Centigrade is marked zero (0). Any thermometer is liable to be more or less inaccurate. The test is usually made by placing the instrument in the axilla, or mouth, for five or more minutes until the instrument is as warm as that part of the body.

A temperature of 103 to 106 degrees Fah., or 39 to 41 degrees Cent., marks a high fever; while 95 degrees Fahrenheit, or 35 degrees Cent., indicates collapse. In all inflammatory disorders affecting the general system, the temperature is high, while in Cancer and Cholera it is low.

Cause of Paralysis.

Paralysis may be the result of poisoning, of overtaxation, of mechanical injury, or of excessive alimentation.

Man as a Study.

The human face, beaming with love and joy, has been called divine; and there is naught on earth so beautiful as the human form—the human body.

Yet we live in a world of natural scenery that has power to charm, and moves sometimes to tears.

It is said that Linneus, when first he saw the Furze, an evergreen of Europe, fell on his knees and prayed, enraptured with its golden beauty. And we must not forget the creation of Art, by which Raphael and others have made their names almost immortal. The picture galleries of the old world and the new; the foaming cataract; lakes that sleep in the arms of verdant hills; the resting place of the illustrious dead—these are places attractive to all, beautiful and grand, yet the traveler who has feasted his soul with the beauties of every clime finds nothing so satisfying, so beautiful, so charming as the form that sits in confidence by his side and responds to the tones of his voice.

As we study the organization of man we shall find no organ, structure or tissue that is not marked with the design of a Great Architect.

The eye is an optical instrument; the heart, a force-pump; the lungs, a bellows; the brain, a battery; and so of the entire system, which is itself a mechanical instrument for the use of the soul. The body has been called a harp of a thousand strings—a beautiful expression—yet far, far short of the living fact. Infinite is the only word that comprehends

the manifold parts of the human frame. We can understand much of its structure, of the various organs and their uses; but we cannot perfectly comprehend man as a whole. For this reason no good definition of man was ever given; and whenever attempted has often been brought into ridicule. The definition of Plato—"a biped without feathers"—was made ridiculous by one who stripped a fowl and exhibited it as "Plato's man." Man is called by naturalists the "two-handed animal (Bimana)." He has been also defined as an animal that laughs and weeps, yet other animals shed tears. The possession of reason has been thought a distinguishing faculty, but it is difficult to say that other animals do not reason, and sometimes man himself is bereft of it. Our own philosopher—Franklin—called man a tool-making animal, and it is doubtless true that no other animal so vastly increases his natural power and ability by the use of tools and instruments. Man walks uprightly; more so than any other animal; his brain is more complex, his speech more perfect. He can study himself, but cannot fully comprehend his mechanism; for he is made in the image of God. He stands at the head of the animal kingdom and treads the vestibule of matter and spirit. On the one hand he is connected with the lowest forms of matter; while on the other he touches the Infinite. These conclusions are inevitably reached by the study of his structure. As we enter this field of inquiry—the structure and physiology of man—we are at once confronted with the problem of vital force—a problem still unsolved, and I believe unsolvable, but forever challenging our attention, our curiosity, our admiration. Like all other forces of nature — steam, crystallization, attraction — it is mysterious and inexplicable. Says a distinguished author, speaking of gravitation, "You see a stone fall; there is no greater

mystery; it is the Infinite in action." To show how keen and subtile is the force that operates in animals and plants, as a mechanic in his shop, let us take an ordinary occurrence as an illustration. Chemists detect no difference between the phosphate of lime found in bones and that dug from the earth. The elements they tell us are the same and united in the same proportions, and, so far as their art can explain, these two substances are identical. Now, put the question to Nature. Place each of these substances about the roots of your grape vine. It appropriates the one and rejects the other as useless for its purposes. So far as Chemistry can determine the oils of cinnamon and lemon are identical. But by the sense of smell a difference is detected instantly. This is called isomerism, but the name does not explain the mystery. Chemistry is crude and imperfect.

Dipsomania.

The remedies for drunkenness may be divided into three classes: moral, chemical and legislative. The present chloride-of-gold craze is necessarily short lived, since it rests upon the fallacy of supposed intelligence and power of chemical matter, or drugs. These can never change the soul; and the soul is ever master and preserver of the body.

Cocaine, chloride of gold, or strychnine may temporarily paralyze the emotions of the soul and obscure the drunkard; but they do not reform. Mr. Mines, who warmly advocated the "Keeley cure" in the *North American Review,* fell from grace, and died a few months later from the combined effects of the cure and the cup. And his case of relapse is not an isolated one. They are numerous. No cure is permanent that fails to reach and change the soul. The chemical, or drug cure, is now and always has been a failure. Gold is the insidious foe of man; not only in his pocket, but in his brain.

Insanity may be the result of injecting gold into the blood, but temperance never. The paralyzed man is not cured in any true sense, but destroyed The moral, mental or educational is the only permanent cure. When once the individual comes to understand for himself the true nature of evil, he wants no more of it. He cannot love and hate the same object at the same time, and when he hates and loathes the intoxicating cup, actually and really, he can by no possibility love it, desire it, or in any sense have any appetite for it. The appetite springs from the soul that is deceived. Unmask the enemy and every soul will *declare* him an enemy. What we want in the cause of temperance is intelligence, understanding. The sensitive soul, or psychic subject, may be temporarily controlled, dominated by another, and while governed by the will of another may lose his appetite; but no psychic control by another is ever permanent. Each soul must eventually decide for himself. The individual either wants rum, or he does not want it. If he does *not* want it, he has no appetite for it. The appetite rests forever upon the understanding and the will.

The trouble with the temperance cause is that we allow man to be deceived. Pure rum, or whiskey, properly made from grain, fruit or molasses, is an antiseptic, and may have its place as a therapeutic agent in the sick room. But now, when rum or whiskey is ordered by the physician, the patient is drugged with fusel oil, *methyl* alcohol, or some other poison. The patient is deceived, poisoned, crazed, and becomes more or less irresponsible. If we really care for the drunkard and want to rescue him, and save our sons and daughters from his terrible fate, let us see to it that he is no more deceived. Let us have things called by their right names. Put the entire control of the manufacture and sale

of intoxicants into the hands of the general government, to the end that we may secure what we call for; and if anything is made by its sale let it accrue to the benefit of the entire people. Stop all traffic in it except by the government, and allow no individual to build a fortune—so-called—on the misfortunes of his fellowmen. Let the government make the liquors as we now make postage stamps and legal-tender currency; then we may get what we call for, and can soon find their true place, whether as a medicine or for mechanical purposes. At the present time it is dangerous to use alcoholics, even as a medicine; and the intelligent physician hesitates to prescribe them in any case whatever.

Characteristics of Man.

The term man is often used in a generic sense, and is thus made to include the entire race, both male and female. Shakespeare calls man "The paragon of animals; the beauty of the world; in action how like an angel! in apprehension how like a God." The unity of the race is a scientific thought, and morally realized would reform the world. As an animal, man is closely allied to all beneath him; as a spirit, to all above him. No perfect definition of man was ever given. There is a certain superiority, and even mystery, in his nature that baffles description. Plato's definition, "A biped without feathers," was turned to ridicule by his cook, who brought in a fowl dressed for the table, with the exclamation, "Here is Plato's man!" Franklin called him "a tool-making animal," so greatly does he facilitate his power by the use of tools and instruments.

Owing to the peculiar formation of the human hand, so admirably constructed, and so far excelling the corresponding parts of other animals, man has been considered by some

naturalists as a distinct order, and called the Bimana ("two-handed" animal). Perhaps the first, or most noticeable, characteristic of man, is his upright stature, and to this we inadvertently refer in our common expression, "How fallen!" "How low!" Other animals are prone or go upon the belly and have their heads directed toward the earth, but man, whose more elevated nature is connected to surrounding beings by moral relations, who can pursue the endless concatenations of cause and effect, and embrace in his mind the systems of the universe, looks toward the heavens and walks uprightly. Such has been the practice of all nations in all ages of the world.

Man is an imitator, and for this reason has been called "A bundle of habits;" but in this he only shares the common inheritance of brutes, as our language implies, "He is *prone* to repeat all customary actions. Imitation is not the stamp of manhood."

Man is a *rational* being, though individuals are often *ir*rational. He measures, by means of trigonometry, inaccessible heights, and reaches conclusions impossible to lower animals, by the use of logic.

Man has more perfect speech, an *articulate* language; and his means of communication are marvelous. The libraries of the world are meaningless to all but man. The lower animals do not share in human speech. Man is *defenceless*. The claws, fangs, talons, hoofs and horns of lower animals are absent. He is not a fighting animal by nature, but evidently designed to subdue the earth by his moral and intellectual power.

To the naturalist we might mention the smoothness and nakedness of his skin; to the physiognomist, the prominence of his forehead and chin; and to the anatomist, the absence of the ligamentum nuchæ (the ligament of the nape of the

neck) and the large development of the cerebrum, or upper brain.

Malthusianism.

(Malthus died in 1846.)

The doctrine of Malthus was founded on the hypothesis that population increases in a geometrical ratio, while provisions only increase in an arithmetical ratio. We quote from his Essay on Population, as follows, viz.: "The deeper seated causes of evil result from the laws of nature." "The number of laborers is too great for the market." "The constant effort in the population to increase beyond the means of subsistence as constantly tends to the distress of the lower classes of society and to prevent amelioration."

These quotations are full of blasphemy. They charge the Creator with folly and injustice.

According to Malthus the unequal distribution of the bounties of nature is largely due to a redundant population. The present population of the globe is only fourteen hundred millions, and yet, according to chronology, the world is at least six thousand years old. Now, according to Malthus, the population of the globe would reach its present number in 750 years from Adam and Eve. He estimates that the natural rate of increase doubles the population every twenty-five years. This is true only of some countries and in some periods. It is not true in a general sense. But suppose it were. We do not need famine, poverty, misery and war to depopulate the earth. Reason and intelligence were given to man, and these are godlike attributes; and by their use man co-operates with the Creator in bringing beauty and happiness into the world, and not disease, poverty and war. We have the character of the Infinite Mind to assure us that not one human being more will be sent to this planet, not one

child born, after the world is full. Reason and intelligence will control these things and others when once we become reasonable and sufficiently intelligent. What we want now is a more equal distribution of labor and its products. At present the world is not too full. If all the people of the globe were settled in the one State of Texas, each family of four persons would have half an acre of land. This is proved by figures, and the talk of a redundant population as the cause of poverty and misery is idle and fallacious. It is an attempt to charge upon the Creator the folly and sins of the creature—the human family.

The very reverse of Malthus' main argument is true. The tendency of plants and animals to increase rapidly grows less and less as we ascend the scale of being. Fish and vegetable products used for the subsistence of man tend to increase many times more rapidly than man himself. Malthus seems to forget that man produces his own food, the same as the honey bee, and for every mouth and stomach there are two hands to provide food; and that the earth waits for man to beautify and adorn it. There is no more danger of over-population where justice reigns than there is of over-production when we have free trade. In the reign of justice and intelligence we shall not increase in population beyond the limit required to fill the earth with beauty and happiness.

The arguments of Malthus are all based on the principle of competition and the private ownership of the common bounties of nature. In justice, or, what is the same thing, under the law of God the common bounties of nature belong not to any one individual, but to all the people in common, and the principle of co-operation will supplant the principle of competition. Under the reign of universal co-operation all necessary incentives to action will be found in emulation —the desire to be useful and noble.

Palpitation.

Palpitation is derived from a Greek word signifying to quake or quiver. The term is now applied to any violent, unusually rapid, or irregular action of the heart. Its origin may be purely mental, as in case of fright, unusual excitement, or anxiety; or it may indicate some derangement of the circulation from indigestion, a thickened condition of the blood or any other source of obstruction to the general circulation. It is often erroneously ascribed to organic disease of the heart. It is more frequently found accompanying the excessive use of tea, coffee and tobacco, especially the latter. It often attends a sour stomach. Some of the worst cases are found in connection with long-standing dyspepsia. Cure the dyspepsia and you remove the palpitation.

Pulmonary Consumption.

Consumption of the lungs was until recently considered an incurable disease. The poet Bryant thus portrayed its fatality as it was of yore:

> "The fields for thee have no medicinal leaf,
> And the vexed ore no mineral of power;
> And they who love thee wait in anxious grief
> Till the slow plague shall bring the fatal hour."

At present we know that pulmonary disease is curable so long as the patient has lung enough left to air the blood properly. There are four important factors in the process of cure. They may be arranged as follows, viz:

1. Proper use of the lungs in breathing.
2. Proper use of food.
3. A proper attitude of mind.

4. Time for the soul, or vital force, to repair and heal the diseased parts.

In his work on Consumption the author mentions the case of Miss Philetta Partridge, of Randolph Center, Vt., who died of acute inflammation of the lungs in 1870, and the autopsy revealed a manifest scar, or cicatrix, upon the left lung, showing the position of an abscess of the lung, or deep ulceration. We learned from her sister, Mrs. Graves, that the deceased had consumption of the lungs fifteen years before her late illness, and recovered. Now, here was positive and ocular demonstration of the cure of pulmonary consumption, and the patient lived for fifteen years afterwards in an ordinary state of good health.

The one important thing in the cure is breathing enough to oxidize the blood. It is necessary for the patient to study and understand the office of the lungs and the nature of atmospheric air; otherwise it is difficult to secure sufficient attention to the matter of breathing.

While hope dies not *out of the heart,* while *wholesome* food and *air* are properly used in abundance, and while man *makes proper use* only of his body for the good of himself and others, his lungs will remain sound.

And now for the specific remedy and prophylactic.

Fill the lungs by inhaling through the nostrils. This, if well done, will take about *five* seconds. Now hold the breath for two seconds; then slowly exhale through the nostrils, consuming *five* seconds more. You have now made one deep and full respiration and consumed twelve seconds. At this rate you can take only five deep, full respirations in a minute, but they will prove a better medicine than all the drugs in the Pharmacopœia. We will call this the first (No. 1) exercise in lung gymnastics. It may be practiced at any

time when not engaged in singing, reading, speaking, or other use of the vocal organs.

When the vocal organs are tired by long use, *rest* is the proper remedy for them; but the lungs rest as the sea rests—never, or, rather, they rest while in action. *In*spiration and *ex*piration supplement each other. The lungs rest as the pendulum rests in its oscillations. No other part, except the brain and heart, is so vital as the lungs. The air is the very pabulum of life, and without it the whole machinery stands still. The lungs will usually *take care of themselves,* if we have ready access to pure air and are sufficiently *happy and active* in some useful employment. If not, we must practice lung gymnastics, or die. The accumulation of carbon in the blood puts out the flame of life as surely as the accumulation of ashes in the stove or furnace stops the draught and puts out the fire. The temple of God must be properly cleansed, or the spirit will leave it. "For ye are the temple of the living God."

Exercise No. 2 consists in filling the lungs as before, and then, while holding the breath, put the will into the muscles, thus sending the arterialized blood forcibly into the extremities, and driving the venous blood quickly back to the heart and lungs to be revivified. This is done by seizing a cane or broomstick with both hands, and grasping it steadily and firmly, gradually using your whole strength upon it. In absence of the stick or cane, you can *imagine* you have one, and the effect will be the same, provided you *put the will into the muscles.* The muscular exercise while holding the breath will occupy five seconds; you will then slowly exhale. Repeat this three times and you will have consumed a minute in taking *four* respirations.

Exercise No. 3 is like the second in all respects but one. Instead of grasping merely with the hands, you stoop over

while holding the breath, and imagine you are lifting a heavy weight in front of you. This exercises another set of muscles.

Each exercise occupies one minute; and at least *three minutes of every waking hour* (and ten would be better) should be given to this *inspiring* and life-giving work, unless we are actively and happily occupied in some other employment. A wholesome diet is necessary to the cure.

Vomiting.

Vomiting will usually effect its own cure, if we take only hot water or lemon juice and water, until well.

Dyspepsia.—This is *bad digestion.* The cure consists in regulating the thoughts, the diet, and the exercise. Gastralgia (stomach pain) is a form of dyspepsia.

Haematemesis.

This name indicates bleeding from the stomach. It may be caused by a wound; by caustic or acrid substances taken, or generated in the stomach by fermentation; by excessive fulness of the blood vessels; by nervous strain attending violent emotions; and it may be simulated by swallowing blood that comes from the nose, mouth or throat. The remedy is rest for the stomach, mind and body. To rest the stomach take light, simple nourishment.

Colic.

This is properly some disorder of the colon or large bowel. It is called in less scientific, or vulgar language "belly-ache." Any severe pain in the bowel is generally called colic. It is caused by any poisonous, acrid or indigestible substance taken into the stomach by accident, or as food or medicine,

especially lead, or black pepper. The application over the seat of the pain of cloths wrung from hot water will generally relieve. If necessary, use the fountain syringe to unload the colon. This disorder is at the present time often called at the hospitals appendicitis, and is made the excuse for a surgical operation. Milder and safer measures are greatly to be preferred, and will generally prove satisfactory. Gas from fermentation in the stomach and bowels is a common cause of colic.

Anaemia is a deficiency of highly vitalized blood. It is cured only by more healthful conditions.

Angina Pectoris is literally a "choking or strangling of the chest"; a severe pain in the chest extending to the shoulder and arm. It is caused, primarily, by errors of diet that naturally lead to rheumatism and gout. May possibly be the effect of violent emotions. Correct the course of life.

Hypertrophy of the heart is literally *enlargement* of the heart, but simple dilatation of the heart, caused by powerful emotions, as excessive grief, or violent physical exercise is often mistaken by professional men for hypertrophy. Lead a more philosophic life.

Endocarditis signifies inflammation of the lining or inner membrane of the heart. It is caused like all *other* inflammation, not attending mechanical injuries, by excessive alimentation, and the remedy is an abstemious diet; not starvation, but a more moderate diet. It often accompanies rheumatism.

Calculus comes from a word signifying lime, or limestone, and undoubtedly has its origin in the use of baking powders, hard water, or the development of uric acid in the system by the process of fermentation.

Calculus more usually affects the kidneys and bladder. It is also called "stone" or "gravel." A large stone in the bladder may be distinctly felt by the proper use of the silver catheter.

Stop the use of baking powders, as ingredients of food; all hard water; and such food as is likely to produce fermentation in the stomach and bowels. Bad cases of long standing, if a large stone has formed, may require the attention of the surgeon to remove the stone, but in most cases a return to correct habits of life will be sufficient.

Nephritis is inflammation of the kidney. It is generally caused by *excess* of albuminous and starchy food, such as beans, eggs and flesh of animals, although such foods may be used in safety if taken always in moderate allowance. Some drugs much used in the past in what is called regular practice, viz: cantharides and turpentine *actually produce* violent inflammation of the kidneys. To cure, use an abstemious diet and plenty of bland liquids to drink. Buttermilk, sweet whey, the juice of watermelons or lemons, and gruels form the best remedies.

Jaundice is a term signifying "yellow." The same difficulty is also called *"Icterus,"* which signifies a yellow bird, the sight of which was formerly said to cure the jaundice. Jaundice is known by the yellow color of the skin and eyes. It consists of a suffusion of bile in the tissues of the body. Constipation and any obstruction of the biliary ducts may give rise to it. A morbid state of mind often undoubtedly leads to it. It indicates a sluggish condition of the vital processes.

A laxative and liquid diet with free use of lemon juice internally, and healthful activity of mind and body are the best remedies.

Peritonitis is an inflammation of the membrane (peritoneum) that lines the cavity of the abdomen and covers the bowels. The soreness and tenderness of the abdomen in peritonitis serve to distinguish it from ordinary colic. Colic may arise from distention of the bowel with gas that comes from fermentation, and may sometimes be relieved by pressure upon the abdomen; but the inflamed peritoneum is very tender to the touch. Remember that all inflammation indicates a thickened and stagnant condition of blood. Restrict the diet, and aid the eliminating organs, skin, bowels, kidneys and lungs—by judicious measures to cleanse the blood and free the circulation. To remove the cause is practically to effect the cure.

Croup is an inflammation of the larynx(the principal organ of voice), attended with an exudation of fibrinous matter that *may in some cases* agglutinate into a sort of membrane (Pseudo-membrane). It occasions more or less difficulty of breathing and a hoarse barking cough. This disease is caused by excessive feeding of hearty food and consequent excess of fibrin in the blood; and is intensified by exposure of the child to cold and wet. Hot lemonade internally as a drink to prevent the coagulation of the fibrin, and hot water compresses externally to the throat to facilitate the circulation are the best remedies. Fasting for a day or two will hasten the return to health. Keep the child's feet warm and clothing dry. 70° Fah. is usually the best temperature for the sick room; or from 60° to 75° Fah.

Pleurisy (or pleuritis) is an inflammation of the membrane (pleura) that lines the chest and covers the lung on either side. It has the same general cause as other inflammations—overfeeding, depression of spirit, enfeebled respiration, etc. Liquify or thin the stagnant blood by use of hot water as a drink, containing lemon juice; apply warmth and

surface friction; and endeavor to vitalize the blood by inducing more perfect respiration.

Pleurodynia (pain of the side) is rheumatism of the *muscles* that lie between the ribs. Treat it as a form of rheumatism.

Whooping-cough is said to be an infectious disease, because it is liable to spread to other persons in the family or neighborhood. In the early stage there are catarrhal symptoms, therefore treat for catarrh. Feed moderately of fresh —not salted—provisions—and endeavor to air the blood more fully by inducing more and better use of the lungs. Keep the skin active by use of proper hand baths, and the feet warm and dry. Judicious management will soon cure without the use of any dangerous drugs.

Mumps is an inflammation of the parotid (near the ear) gland. Treat on general principles. It is not a dangerous disease, and soon subsides.

Tetanus is a spasmodic and continuous contraction of muscles, causing what is called "lockjaw," or rigidity of other parts. It is caused by a too intense current of electricity (or nervous energy) distributed to the muscles, or a too rapid succession of shocks given along the nerves to the muscles. This nervous current is an intermittent (or Faradic) current, and the succession of impulses is so rapid that the contracted muscles have no time to relax. Any unusual irritation of some part of the body may serve to excite the intense discharge of nervous energy from the sensorium (or seat of the soul). A *more philosophic mind* is both a preventive and cure. Allay excitement by judicious measures.

Hydrophobia (fear of water) is known to the profession as "rabies" (madness). It is far more prevalent now than it was before the days of Pasteur, to whose misdirected

efforts and treatment many have fallen victims. The inoculation of matter taken from the body of diseased animals, can produce disease only. What the world needs to-day is inoculation for sanity. Like begets like. Sowing tares will not produce wheat. A mind, sound in understanding, can not be moved from its equipoise by the virus of an angry man, or the rabies of any animal. Fortify the mind against all fear. Fortitude and understanding will both prevent and cure. The disease is the effect of psychic influence rather than any material poison. Do not fear it.

Rickets (inflammation of the spine) is a result of defective nutrition, and is associated with scrofula. The bones are too soft and yielding and the blood impure from bad feeding, want of sunlight, etc. A little lime water in the milk, fed to the child while the bones are growing, more sunlight, and better and more wholesome food will prove remedial.

Locomotor Ataxia (irregularity of motion in walking), marks, anatomically, degenerative changes in the nerves of the spinal cord (more particularly the posterior columns of the cord), and base of the brain. It may be caused by whatever drains the system of vital energy. Is frequently accompanied by loss of sexual power. Prevention is better than cure. Drug medication will always in the end disappoint. Correct all conditions that are known to be contrary to the higher law of our being.

Coma (deep sleep) is a condition of unconsciousness from which the patient cannot be aroused. Temporary unconsciousness is termed syncope (fainting), and is due to temporary suspension of the functions of respiration and circulation. Coma is usually due to *compression of the brain*, caused either by some mechanical injury of the head, some powerful drug or a thickened, sluggish or stagnant condi-

tion of the blood; but a purely psychic condition known as "trance" *might be,* and sometimes is, confounded with coma.

Fainting is a good illustration of the automatic nature of the body. It is induced by recession of blood from the brain. The patient generally falls prostrate; the blood naturally returns to its usual channels in the brain, and the patient revives. Free the circulation if obstructed.

Sciatica is properly an affection of the sciatic nerve on the back part of the thigh. It has been called neuralgia (nerve pain), very properly. It is due to uric acid in the circulation, and requires some regulation of diet and exercise, with more judicious care of the body as to exposure to cold and wet.

Vertigo (dizziness, giddiness) is a symptom of deranged digestion. It may be due to drugs, often miscalled medicines. A long course of heavy feeding is sure to produce it, while a judicious and abstemious diet with absence of tea, coffee, condiments, drugs and narcotics is equally sure to cure it. Attacks of vertigo can be warded off by powerful determination of the will of the patient himself. He can resist it by effort of the will.

Neurosis is a general term for any derangement or disorder of the nervous system. Now the nerves are nothing but telegraphic lines of communication, between the soul and body—and there will always be disorderly communications until the operators themselves (the souls of human beings) become sane and orderly. A true philosophy of life respecting the nature and uses of our physical bodies, and the ultimate destiny of the soul is a positive and permanent cure for all (neuroses)nerve disorders. A disease known in the Orient as Beri-beri (weakness) is considered or classed by the profession among the neuroses. It is probably caused by an exclusive diet of rice that fails to nourish the system.

Hysteria (literally, "womb" trouble) is popularly considered a *feigned* disease; but has its basis in an unsatisfied condition of the soul. A more intelligent appreciation of the real needs of the soul, and a better understanding of the structure and functions of the body would help to dispel the fear that sometimes leads the human mind to abandon temporarily the helm of reason and give way to reflex and irregular actions. A reduced and depleted physical condition weakens the power of the will over the body; hence attention must be given to restoring physical strength and harmony. At the time of attack, patience, firmness, kindliness and absence of all fear on the part of attendants are the best factors of treatment. The case is not dangerous, except from long mismanagement on the part of attendants and friends.

Headache is often due to purely mental states or psychic emotions that crowd the vessels of the brain with blood. Violent emotions often produce headache. It may be due to uric acid in the blood, the formation of which is fully explained elsewhere in connection with rheumatism. Headache is very often due to the use of drugs, tea, coffee, and unwholesome food. The only permanent cure is to find and remove the cause, but do not accept the theory of pathogenic microbes as the cause, and then take poisons to destroy an imaginary foe. A pure philosophy and wholesome living always bring positive and permanent relief.

Anaesthetics (without sensation).

The term anæsthetics is applied to drugs that may be used to suspend or destroy sensation and perception. They are generally used by surgeons during operations that would otherwise be painful, but their effect is always more or less injurious and sometimes fatal. They should be administered, if ever, by careful and intelligent physicians.

The three substances most commonly used to induce anæsthesia (insensibility) are nitrous oxide, or "Laughing Gas" (discovered by Priestly in 1785), ether and chloroform. The vapor of ether is very inflammable, and mixed with air in certain proportions explodes with violence. For this reason its use at night is hazardous, and chloroform is generally preferred by some surgeons, especially for use at night.

The vapor of chloroform is not inflammable, but it undergoes certain changes in the presence of artificial light which give rise to noxious and irritating fumes. For these reasons we should always *prefer* daylight for using anæsthetics.

The London, or A. C. E. mixture, is by many preferred to any one anæsthetic used alone. It consists of alcohol, chloroform and ether in the proportion of 1, 2, 3, respectively, in the order of their initials as above given.

The use of ether is generally considered less dangerous than that of chloroform, but there are good reasons for thinking that one is as dangerous as the other, if pushed to the same extent. Both produce temporary paralysis of the nerves, and this effect is gradually extended to the nerve centers, producing entire unconsciousness. But the effect of chloroform is more rapid and more quickly dissipated; *i. e.,* the effects of ether do not pass off so quickly as those of chloroform. The real danger of using anæsthetics seems to be in proportion to the whole amount taken at one time and the duration of the anæsthesia. During the state of complete insensibility to all outward things the whole vital machinery, excepting the heart and lungs, seems to stand still, and when these—the heart and lungs—are also overpowered for many minutes at once, death ensues. Now, chloroform, being more rapid in its effect and more evanescent than ether, is supposed to be more fatal; but after all,

the whole danger in either case may lie in the extent and duration to which the anæsthetic is pushed. The *fatal effect* of ether, when administered or inhaled, is usually separated from the *time of its administration* by an interval of one or more days, and is perhaps often *ascribed to other causes,* such as shock from the operation; pneumonia, which is more or less likely to ensue; dropsy, or septic poisoning; all of which may really be the natural result of inhaling the vapor of ether. The proportion of deaths from the use of ether, *as reported in medical works,* is only one among 16,000 inhalations for anæsthesia, while the deaths from chloroform are one to a little less than 3,000 cases.

For occasional use a napkin folded into the form of a cone, or a sponge of the same form, may be used for conveying the vapor to the nostrils. Not more than a spoonful of either must be poured upon the napkin or sponge at a time, lest the liquid itself may drop upon the face or possibly be swallowed. For habitual use, as at clinics, or in hospitals, the Esmarch Inhaler is used.

In using the folded napkin or sponge *do not hold it so closely to the face* as to exclude a proper admixture of air, whether using ether, chloroform or a mixture of these, for without air the patient becomes asphixiated.

The recumbent, or semi-recumbent position, of the patient is best for administration, as the muscles become entirely relaxed in complete anæsthesia, and when the muscles of the arm make no resistance to its free motion, and refuse to hold it up, if lifted, the nerves have become incapacitated to transmit sensory impressions. After one or two partial or shallow inhalations, the patient may then be instructed to draw fuller breaths, slowly and steadily. By giving *gradually at first,* coughing and struggling may usually be avoided. Patients who wear false teeth should remove

them, and no tight clothing should be allowed to interfere with the free circulation of the blood. A time for anæsthesia should be chosen, if possible, when the stomach and bowels are not oppressed with much food or other accumulations. Patients who manifest a strong repugnance to any anæsthetic should *not* be forced to submit. The soul of the patient is often wiser than the intellect of the surgeon or attendant. Consumptives, whose breathing capacity is greatly diminished, and drunkards, whose lungs are often very much hardened, or crippled, by the use of alcohol, are not good subjects for inhaling chloroform or ether. There are, as we may observe, three well marked stages or degrees in the progressive effect of anæsthetics. These are:

1. Diminished or suspended sensation.
2. Diminished or suspended human consciousness.
3. Diminished or suspended respiration.

Stertorous breathing (snoring) marks the entrance of the third stage and indicates that the paralyzing effect of the drug has reached the respiratory center at the base of the brain. The effect of the drug is at first superficial (upon the periphery of the nervous system) and if continued gradually extends deeper and deeper till it reaches the great ganglionic centers of the brain. If this is understood and observed, and the drug is not pushed beyond the *second stage,* while due access of air to the lungs *at all times* is allowed, there is very little danger. The *pulse and respiration* must be constantly watched, and not allowed to be overpowered. If the pulse flags, or stertorous breathing occurs, the anæsthetic must be at once removed, the chin raised so as to make the respiratory canal more direct, and, if the tongue has fallen down over the glottis, it must be drawn forwards in the mouth so as to again admit air to the lungs. If respiration ceases, raise the feet of the person higher

than the head to allow the blood to return easily to the brain, and if this does not restore respiration, try artificial respiration by quickly and forcibly compressing the lower part of the chest several times a minute to force out of the lungs the vapor and heavy carbonized air. The application at the pit of the stomach of a very hot wet towel, artificial respiration and inversion of the body are among the most useful measures of resuscitation.

We do not recommend the use of the hypodermic syringe, or galvanic battery. If thought advisable, stimulants can be slowly introduced into the stomach of the patient by turning the head to one side and allowing them to trickle slowly down at the side of the larynx into the œsophagus. If necessary, restorative measures *must be continued* for one or more hours.

Dr. Fletcher, in "Our Home Doctor," gives numerous instances to show that persons have been resuscitated after lying perfectly insensible, possibly in a trance, and apparently dead, for days. A cloth wet in chloroform must never be laid closely over the mouth and nose. Give room for air.

Anæsthetics are not infrequently used in parturition during the passage of the fœtal head through the inferior strait of the pelvis. If properly given, and at the right time, an anæsthetic is usually considered a great blessing. In all feasible cases, however, the use of hypnotic suggestion may very properly supplant the use of anæsthetics. Post-partum hemorrhage is more frequently observed in parturient cases treated with anæsthetics. They tend always to impair, more or less, the vital force, and any disease of the heart, brain or lungs renders their use inadmissible.

Small-pox (Variola).

The term variola was coined in the middle ages to designate a disease not supposed to be known to writers of antiquity. It comes to us from the Latin varius (variegated, or spotted,), and for several centuries was used to designate measles as well as small-pox.

The term pock (a bag or pouch), which was variously spelt, is of Saxon origin, and the plural of pock (pocks) is what we now write pox. There was no *small*-pox until the fifteenth century; which is to say, pox and small-pox was all one thing. The large pock, or simply pox, is now called syphilis. The bubo of syphilis is a large or great pock. The origin of syphilis, or great pox, rests in obscurity. The word probably came from the Greek (sipalos) and signifies dirty or shameful. Its origin is impurity. Whether small or large, a pock is a bag or pouch filled with pus. In small-pox there are sometimes thousands of these little abscesses in the skin or mucous membrane; in syphilis there are only one or two, and these are situated in the groin, or axilla.

Now, an abscess seems to be nature's method of eliminating from the system dead, waste or noxious matter that cannot be readily eliminated by the depurating organs. It is a resort for getting rid of filth and poison through pain and sickness.

For the first description of small-pox, as such (though the same condition might have been known by other names, perhaps plague or pestilence) we are indebted to Arabian physicians, Rhazes and Avicenna. These physicians considered measles and small-pox as modifications of the same disorder.

Sydenham was the first who made a distinction between

small-pox and measles, and at the same time divided small-pox into two kinds, the distinct (also called discrete) and confluent. His distinction was, evidently, one of degree and not of kind. If the pustules were so numerous as to run together it was "confluent," otherwise, distinct. Sydenham introduced an important change of treatment—the cooling regimen, light bed-coverings and fresh air. Previous to his time the sweating process and the careful exclusion of cool, fresh air was the common practice, and this no doubt accounts for the great mortality that formerly accompanied this disorder.

Before proceeding to describe small-pox we must remind the reader or student that the appearances which it presents in different cases are singularly diversified. The number of pocks, or abscesses, may vary all the way from one single pock upon the finger or elsewhere to more than twenty thousand, almost completely covering the skin, and also the lining membrane of the mouth, fauces, throat, lungs, stomach and bowels. Where the disease is slight and there is only one or two pustules, or pocks, it is often called chicken-pox, or, *if the person has been vaccinated,* "varioloid" (resembling small-pox.) Some cases, not very severe, are often called German measles. It is all pox, however, when there is a pustule to be found, whether small or large. If we are ever to have a science of medicine, we must confine ourselves to the proper definition of words, and a pustule is a pock.

To the unthinking multitude, who generally blindly follow acknowledged leaders, small-pox arises only from contagion as first taught by Boerhaave, although it is evident and logically conclusive that the first man who suffered from small-pox did not so receive it. In the first instance it must have been developed by unhealthy conditions, and since

nature's laws are uniform and constant, it must be again and again so developed ,wherever the same or similar conditions are allowed to exist. Boerhaave's idea of contagion has led multitudes to build falsely on isolation and quarantine as a means of protection. No isolation or quarantine can ever be made perfect, and if it could, still it could not prevent the development of this disease from unhealthy living, as in the first instance.

The only perfect protection can be secured by keeping the blood and body at all times properly cleansed inside and out. Vaccination is worse than useless, because it conveys *into* the blood and body the very matter (small-pox) which we are so anxious to avoid.

Some persons are susceptible to contagion; others are not; and it is not difficult to determine who are and who are not. Fire will not burn where there is no fuel. Fermentation will not take place in pure water; but stagnant water becomes impure and may then ferment. Every plant, germ and insect has its natural habitat and its natural conditions of life. Without these conditions it cannot live or propagate. Germs of lower forms of life are always present, sooner or later, wherever conditions favor, and it is impossible to exclude them unless we exclude at the same time atmospheric air, or oxygen, which is equally necessary to the existence of man. Spontaneous generation is necessary to account, scientifically, for the existence of the *first* germ of animal or vegetable life on this planet. The first vegetable germ ever produced did not, could not, descend from a parent germ. There was, evidently, no parent germ prior to the first, therefore the first must have been developed. The same is true of the first case of small-pox. Contagion or infection may hasten disease already commenced in the susceptible, but cannot impart it to those whose bodies are clean within and without.

A pustule, or abscess, is the result of inflammation, and no inflammation can take place when the blood is pure and the circulation unobstructed. The clogging of some part of the circulation with an excess of fibrin, waste or other impurities is essential to inflammation. No clogging, no inflammation, and no pustules.

Small-pox is considered a contagious disease. It is so to some persons, but not to the pure and healthy. Powder is inflammable, and will burn if ignited, but gold and silver are not. A suitable soil will produce wheat, but wheat will not grow upon a clean, flat rock. Soil is as necessary as the seed. The soil that now grows wheat was once rock, as we are taught, but it has to become disintegrated and greatly changed before the seed can germinate within it. So of the healthy body; it resists disease until polluted, abused and clogged one way or another, and the best protection is *not* in trying to avoid the germ or possibility of infection, of which there can be no certainty, but in keeping the body so pure and vigorous and the circulation so free and active that infection becomes impossible.

Small-pox is, no doubt, infective to persons *susceptible to its effluvia,* and it is not wise for any person to expose himself unnecessarily. The attack follows exposure, if at all, not immediately, but after an interval of about two weeks (possibly one, or three weeks), which interval is called the period of incubation (hatching). The attack begins with pain in the head, neck and back (in the cerebro-spinal axis); chills and fever (called eruptive fever). If the stomach is foul, there will be nausea and vomting. If the blood is partially putrescent, or already in a *state of fermentation,* there may be hemorrhage from the nose, stomach, bowels or uterus.

The eruption (at first pimples) may be seen at the end of two or three days on the face, chest and wrists, and gradually extending during one or two days over the body. Upon the third or fourth day from their first appearance the pimples are converted into vesicles (blisters) containing a thin fluid, and later into pustules (sacs filled with pus) containing thick, opake matter. These pustules or pocks are small abscesses. They break and discharge, and if the pus, or matter, is allowed to dry upon the surface it forms sacs or hard crusts; and when the scabs fall off they leave pits or marks that disfigure the face. If the surface is kept soft or moist without much irritation during the discharge of the pustules the pock marks may be avoided. This can be accomplished by applying one or two thicknesses of white muslin dipped in a saturated solution of boric acid often enough to prevent drying. Any mild antiseptic solution, like vinegar and water, may be used. The pimples change to vesicles and pustules and discharge their contents in about a week. It is only while the sores are discharging that the wet cloth need be applied. The boric acid solution is antiseptic and neutralizes the infectious nature of the pus. It might be usefully applied once a day to the whole person. By the use of proper antiseptics, cool, fresh air to breathe and baths within and without to wash away impurities, small-pox may be almost wholly shorn of its terrors.

Place the patient in an upper chamber or attic for better ventilation, and keep open doors and windows much as possible without absolutely chilling the patient. Use the fountain syringe to keep the colon free of all offending matter; give lemon juice and water abundantly to reduce fever and cleanse the blood, and some mild antiseptic to counteract putrefactive tendencies. Old nurses formerly gave milk punch, but it may be better to substitute tincture of gaul-

theria 1 dram, boric acid 1 dram and camphor water 8 drams. Mix and give a dessert spoonful every two hours during fever.

With proper nursing and simple liquid food in moderation no other treatment than the above will be necessary. The winds of heaven are the best disinfectants.

Observations: Some authors deny that small-pox pustules affect the mucous membrane of the intestinal canal, but admit the occasional presence of ulcers into which the pustules may be changed.

The morbid matter may be received by inhaling it, by inoculation or by vaccination. It is better to avoid it in any and every form.

A plethoric habit predisposes to a severe form of the disease. Temperance is prophylactic. The eighth day of the eruption is usually considered the most critical. Under ordinary treatment in the past about one-sixth of all cases have proved fatal.

Physicians rarely communicate small-pox, simply because they expose themselves more freely to the open air, which disinfects.

The *mildest form of varioloid* may communicate to a susceptible person a severe form of small-pox. This proves that vaccination, so far as it infects the system, is genuine small-pox. One attack of small-pox gives immunity from another no longer than it takes to fill the blood with fermenting and putrefying matter. Persons have been known to have small-pox five times. (See Baron's Life of Jenner.) Drastic purgatives are to be avoided in all eruptive fevers, because they tend to irritate the lining of the intestinal canal and turn the eruption inwards.

Every intermediate degree between the most malignant

small-pox (as in case of Robert Grosvener of England), and the mildest form of varioloid will sometimes be seen in persons who have been thoroughly vaccinated. We are often asked what we would substitute for vaccination. Such a question would never be asked if the real character of vaccination was understood. It is evil and only evil, and the only proper substitute for evil is good, as light is the substitute for darkness.

The true cause of small-pox and most other forms of eruptive disease is the decomposition of urea and other waste or useless matter in the system, and the only permanent remedy is a wiser mode of living and purer and better blood.

The diffusion of intelligence in regard to the true principles of health will be the death knell of vaccination and the true prophylactic against infectious disease of every kind.

Remedy for Small-pox.

Dissolve an ounce of cream tartar in a pint of water and drink at intervals when cold. "It cures in three days," says Edward Hine to the Liverpool Mercury, and leaves no mark.

Tapeworm (taenia solium).

The Tapeworm is so named on account of its form or shape. It resembles a piece of tape or ribbon, with numerous seams or joints. It is an intestinal worm (Entozoon) and is usually several feet and sometimes yards in length. The only positive proof of their presence is the passage from the bowels of pieces of the worm, each piece varying from a few inches in length to several feet. Each joint of the worm, it is said, has power to generate. The worm is generally about half an inch in width and tapers towards the

head, so that it is difficult to tell without a magnifying glass whether the head has been secured; if not, the worm will continue to grow. The cause of tapeworm is attributed to eating of raw and measly pork, but an impaired and foul condition of the blood and intestinal canal is undoubtedly essential to its lodgment and growth. Worms do not infest healthy bodies. Among the Abyssinians the flowers of Kousso were used as a remedy for tapeworm, but in this country it is reported uncertain. Oil of turpentine has been used, but this affects some persons unpleasantly. The Male Fern (Aspidium) followed by a brisk cathartic is usually quite efficient. It was the basis of a once celebrated remedy, Madame Nouffer's, but its efficacy depended, perhaps, largely upon the active purgative by which it was followed. Some combine Male Fern with Kousso. The fluid extracts —two drams of each—with a dram of simple syrup forms a dose. It is given in the morning while fasting, and is to be followed in three hours by a brisk cathartic. An ounce of pure and fresh castor oil is usually preferred as a purgative. Two ounces of the oil is more certain and no more violent. The cocoanut is said to be an efficient remedy Take the milk and pulp—the latter well masticated— of a cocoanut for breakfast. No cathartic is said to be necessary. We have not tested this latter remedy. The Pomegranate (Granatum), bark of the root, is considered efficacious. Two ounces of fresh bark are boiled in a pint and a half of water down to a pint, and two ounces of the decoction given every half hour. Three or four doses are usually sufficient to expel the worm. If it fails it may be due to the age of the bark. In a decoction of fresh bark the tænia does not live above three hours. The Pomegranate is to be followed with a brisk cathartic, if necessary, after four hours. There is still another remedy which is efficient, safe and convenient.

It is pumpkin seeds. Remove the skins from two ounces of seeds and eat slowly the meats of the seeds for supper, taking nothing else till morning. In the morning, still fasting, take an ounce or two of fresh castor oil. If the person desires the oil may be taken in a glass of good lemonade. The worm will be expelled entire. (To pass the worm entire let the patient sit in a tepid bath so that the worm may be passed into the water.) Persons who live on *vegetable food* rarely, if ever, have tapeworms.

The Liquor Traffic.

The *Scientific Review* says that alum, copper and sometimes lead are found in beer, and that cocculus indicus, stramonium, and the Wild Rosemary (an acrid narcotic) are occasionally used to adulterate beer at home and abroad. It is well nigh impossible to get a pint of any kind of alcoholic liquor even for medicine that does not contain nux vomica, strychnine or other poison far more deadly than alcohol itself.

But there are many kinds of alcohol. The ethyl, or grain alcohol, is the only kind suitable for use in internal medication.

Now there is one way to stop this murderous adulteration and control the traffic. Let all liquors be *made and sold at cost by the general government.* This will insure purity and destroy at one blow the avarice that leads to adulteration and poisoning.

Appendicitis.

In the interest of our common humanity we feel impelled to warn our readers against submitting to surgical operations for appendicitis. Do not give your consent, and if it

is proposed to operate reject the proposal at once and seek wiser counsel. Many have lost their lives by this needless operation. Is the operation safe? No, indeed. We know of one small city where five of these operations were performed in one season with *three deaths,* which is sixty per cent. mortality, and the whole five were performed by distinguished surgeons; and yet medical journals report a mortality of less than five per cent. Twenty years ago such an operation was not thought of, and the word itself has been coined since that time. It is found only in the latest dictionaries. The word signifies "inflammation of the appendix." Now there are several portions of the body designated by the name of appendix. One is the cartilaginous projection at the lower end of the breast bone over the pit of the stomach, two are found connected with the auricles of the heart, and one is a small tube, about the size of a goose-quill, depending from the cæcum (first portion of the large bowel) in the right groin. The latter appendix which is supposed to be the rudiment or undeveloped part of the longer cæcum of the lower mammalia is now the point of attack of the surgeon.

Now the only possible excuse that we can see for removing this part of our physical body is that it is liable to be used as an argument to prove Darwin's theory of Evolution.

We believe that appendicitis is a figment of the surgeon's imagination, a sort of hospital hysteria, but we would not object to it if it was not made an excuse for a dangerous operation or if the true nature of the case was always understood by the patient and friends.

In our judgment the patient stands a better chance of recovery under simple water treatment; wash out the bowels and apply locally to the seat of the pain hot applications frequently renewed.

Dyspepsia (bad digestion).

This condition, which has been called the parent of many ills, can be removed and permanently avoided by partaking only of necessary and wholesome food at proper times, in a proper way, and in a proper frame of mind. No food is *necessary* until the supply of wholesome food previously taken has been nearly or quite exhausted. The need of food will, in the exercise of reason, be indicated by hunger. Wait for a natural appetite. No food is *wholesome* unless properly selected and properly cooked. The nicer kinds of good ripe fruit require no artificial preparation. The best *way* to partake of food is to use the knife, teeth, tongue and muscles of mastication sufficiently to divide and reduce every morsel to a pulp that will be soluble in the juices of the salivary glands, stomach, liver and pancreas, aided only by good drinking water. No insoluble matters should be allowed to enter the stomach. (See articles on Diet in this volume.)

A proper frame of mind for partaking of food is a mind at peace with all the world, with a determination to use the strength derived from food for the best good of all.

The above is an infallible prescription for removing and preventing Dyspepsia if intelligently followed.

Enlargement of the abdomen may be due (1) to excessive eating and drinking; (2) to accumulations of fat; (3) to dropsical effusion; (4) to hypertrophy of the spleen or liver; (5) to gas from fermentation; (6) to retention of the natural secretions from the kidneys and bowels; and (7) in woman to pregnancy and fibroid tumors.

Sewerage.

Nearly all cities, towns and villages in the United States are now constantly polluting our rivers, lakes and harbors with the excreta and offal from animal and human bodies. This is all wrong and must necessarily be the cause of more or less sickness and premature death.

In England there are many towns, Rochdale, Burnley, Coventry, Brentford and others where the excreta and waste is either consumed or carried back as a compost to enrich the land. By this improvement, in Rochdale, the death rate has been reduced in twenty years from 25 to 19 in every 1,000 of the population, saving in that town about 450 lives annually.

Rate of Mortality.

The annual rates of mortality as reported in the Census from A. D. 1870 to 1890, were for Austria, 30.6; for Italy, 28.6; for Prussia, 25.6; for France, 22.8; for Belgium, 21.4; for England, 20.3; for Ireland and the United States of America, 18.; and for Sweden, 17.6, making the average length of life in these countries, taken together, a little more than 44 years; while in Ireland and the United States it was 55 years.

The rate of mortality diminishes as the diffusion of sanitary knowledge increases.

Aconite (monkshood).

This is a powerful narcotic poison, and yet is much used in the practice of medicine. Paralysis of both the sensory and motor nerves is the natural result of its administration. When tasted it causes a burning sensation in the throat. In

the books it is classed as a vascular sedative (impedes the circulation), anodyne (stops pain) and antipyretic (reduces fever).

One late author says that its employment in disease "is one of the most universally recognized procedures in medicine." Being used by the Homeopaths it is popularly supposed to be harmless, but this, also, is a mistake. It is a dangerous drug, and medical authors say by way of warning that it is not to be used in asthenic cases; that is to say, feeble persons cannot bear it. Now if small doses injure a feeble person, why should we give it to the strong? If large doses kill by reason of the poisonous nature of the drug, will not small doses injure? The average dose of the powdered root, according to Oldberg and Wall, is ½ grain, and of the tincture one to five drops in water. One drop doses will perceptibly affect the circulation in a short time. At first it slows the pulse, and this symptom is usually construed as a remedial effect. We do not so regard it. If the supposed remedy is pushed, or continued for two or three days, even in so-called medicinal doses, we get debility in consequence, and the number of pulsations per minute is increased.

We do not see any reason why we should reduce the pulse by giving a narcotic poison and leave the cause of the abnormal symptoms untouched. We must learn to reduce fever and stop pain by removing the cause before we can lay any just claim to science. To obscure symptoms merely is not removing the seat of the trouble, and to obscure them by the use of poisons that tend to destroy life is at least a questionable procedure, even though it be "one of the most universally recognized."

Again, it is admitted that "aconite is useless and harmful in prolonged acute diseases, such as scarlet fever, if constantly employed." Now *if* the drug is remedial in its

nature its constant employment ought to lead to convalescence. We do not sanction its use even as an outward application. St. Jacob's oil is a weak aconite liniment. There is no known antidote to the poisonous effect of aconite and the use of it under any circumstances is to be deprecated. The remedies usually given as antidotes only serve in many cases to increase the danger.

Fleming's tincture of aconite has nearly twice the strength of the official tincture, and the tincture of the root, which is now official, is twenty-eight times the strength of the tincture of aconite leaf. It seems wise to drop from the Materia Medica all preparations of aconite. We can reduce fever by better means.

Virility.

To preserve or restore virile power practice temperance in all natural things, abstinence from all unnatural things, and if necessary to allay excitement take a cold bath.

To Purify the Blood.—Stop taking *into* the body poisons and impurities; use the lungs to their full capacity and exercise the muscles, with reasonable vigor, several hours per day. Take such food only as will *dissolve wholly* either in the mouth or in the stomach or bowels; that is to say, do not take the skins, rind and seeds of fruit, woody fibre, gristle or bone. Use no swine's flesh, salted provisions, pastry or as a general thing *fried* foods when better food can be procured. Cook, unless of the nicest varieties, all apples and pears, and take eggs raw rather than cooked. The albumen of the egg is much hardened by cooking. Eat what is needed, but do not *crowd* the system with excess of food. Avoid strong tea and coffee, rum and tobacco. Good soft water or the juices of ripe fruits are best to give fluidity to the blood. The blood can be more rapidly purified with

vegetable food. Animal food more rapidly putrifies and contains more impurities. The skin, lungs, bowels and kidneys, or in other words, the eliminating organs, are the only proper agents for purifying the blood. This recipe is valuable to every family. Try it. Depend upon it, and you will save your money, your health, and in many instances your life.

Bites and Stings.

Remove the sting if found in the wound. If further treatment is necessary wet the part with vinegar or a strong solution of permanganate of potash, or soda.

Snake bites were formerly treated with full doses of whisky,but intelligent physicians often prescribe five drop doses of spirit of ammonia in a wine glass of water.

Strangury (difficult urination) is generally caused by uric acid or gravel in the bladder, or by impactions in the lower bowel. Empty the bowel by use of the fountain syringe, then, if necessary, take a hot hip bath. To avoid the trouble correct the diet so as to avoid flatulence, fermentation and constipation.

Stomatitis (inflammation of the mouth), or sore mouth, may be caused by chemical or mechanical injury, but the most common cause is the use of mercurial preparations, salt and salted provisions. Correct the diet, making use of bland and fresh provisions, and wet the mouth twice a day with pure Tincture of Myrrh.

Danger Signal.

Physicians of different schools, at least Allopaths and Homœopaths, are at the present time prescribing strychnine, which is a most deadly poison, as a tonic. Beware of the poison and of doctors who give it. It *excites,* but only *to de-*

stroy vitality. "Why judge ye not of yourselves what is right?" A poison can be medicinal only when it is necessary to *kill* something in order to have health; but strychnine is not restricted to any such use; the Allopath gives it to stimulate the muscles and nerves in chronic constipation, pneumonia, palsy, incontinence of urine, blindness from tobacco, and other forms of disease; and the Homœopath that is trusted by the public as a safe practitioner does not hesitate to use this same drug, since so small a quantity produces so large an effect. One grain of strychnine may be divided into one hundred equal doses and still each dose, small as it is, will powerfully affect some persons; and yet some doctors give five, and even eight times as much at a single dose. Is it any wonder that people die when taking such drugs?

Pelletier and Caventon, who discovered strychnine less than eighty years ago, killed a dog in half a minute with one-sixth of a grain. The United States Dispensatory says that with the exception of prussic acid, strychnine "is perhaps the most violent poison in the catalogue of medicines." Still it is used by regular M. D.'s as a tonic and stimulant. It is used also in purgative pills; and there is no rule in prescribing it below one-twelfth of a grain, twice or thrice a day, only as the poor human judgment of the practitioner may decide, and that is always guesswork. Those who do not want to trust their lives to such deadly medication will, if wise, study health and medicine *for themselves.*

Salicylic Acid.

It ought to be widely known that Salicylic acid, now so much used in the putting up and preservation of cider, fruits and other preparations used as foods, is a dangerous poison. It is made from phenol (carbolic acid) and caustic soda. It tends to produce headache, deafness, dimness of vision, epi-

leptiform convulsions, paralysis and death. The enactment of pure food laws and the study of the science of health, based on logic and philosophy, ought to prevent the use of such dangerous and powerful drugs.

Bleeding.

To *a small superficial vessel* apply for half a minute a smooth piece of potassa alum.

If the bleeding is from a larger vessel hold the thumb or finger upon it firmly enough to stop the bleeding until coagulation takes place in the divided vessel. It will usually require from five to ten minutes. When the bleeding is profuse and cannot be controlled by compression, merely, then seize the bleeding vessel with forceps and apply a ligature.

For post partum hemorrhage inject hot water (110° Fah.) into the vagina.

For bleeding at the stomach let the stomach have reasonable rest, then feed only liquid food in small quantities at regular intervals, so as to allow the bleeding surface opportunity to heal.

For *passive* hemorrhage from the lungs, usually caused by congestion of the lung, take air gradually and moderately, but voluntarily into the lungs, to properly air the blood. No other remedy is so efficacious. Soon as the blood is properly oxidized the oppressed lung will be relieved. Warmth will promote the circulation.

For *active* hemorrhage from the lungs, caused by a wound or mechanical injury, rest and quiet, so far as may be consistent, must be secured for several hours or days. Use no hot drinks or stimulants in active hemorrhage of the lungs, but cool drinks, rest and quiet.

Purpura.

Purpura (a purple color), scorbutus, or scurvy, is a condition characterized by livid spots on the skin from extravasated blood, languor and loss of muscular strength, pains in the limbs, and occasionally bleeding from the mouth, nostrils, bowels, uterus, lungs, or stomach. There is generally also paleness of the countenance, general debility and depression of spirits.

It is caused by the excessive use, for long periods of time, of salt, or salted provisions, vitiated air, stagnant water, mercury, or any and all causes that kill the life of the blood. The indication of cure is to purify the blood, and build up the nervous and muscular power. Fresh provisions, with an abundance of nice, ripe fruit, pure water, with some lemon juice for drink, and a cheerful, active life in the open air are the essential remedies.

Haematoma (a bloody tumor) is a bunch, or tumor (of the scalp most frequently) caused by an injury that breaks or cuts off one or more of the small bloodvessels that enter the walls of the cranium, and allows the blood to escape and distend the integument. If applied in season before the blood has formed a firm coagulum—say twenty to thirty minutes—a coating of collodion, applied with a camel's hair brush, two or three times in the course of five or ten minutes, will reduce the tumor in an hour; but the collodion may be left for two or three days before it is peeled off. Removed in this way there is no discoloration of the skin. The contractile power of the collodion returns the blood to its proper vessels.

Lead-Poisoning.

This trouble occurs most commonly in workmen who handle lead, or some of its compounds. It sometimes results from the use of water conveyed in lead pipes, or stored in cisterns lined with lead. Paralysis of the forearms, known as "wrist-drop," colic attended with constipation, and severe pains in the head and joints are the most prominent symptoms. Lemon juice, washed sulphur, and cream of tartar, epsom salt, and iodide of potassium are the most reliable agents tending to eliminate the lead.

The dose of iodide of potassium is 5 grains, dissolved in water, three times per day. It should not be long continued.

Lemon juice may be given *ad libitum*.

Washed Sulphur and Cream of Tartar, or Epsom Salt may be given with comparative safety. They are *laxatives* and tend to remove, temporarily, the constipation. [Sulphur that is not washed is liable to contain arsenical compounds.]

The dose of Epsom Salt, Washed Sulphur, or Cream of Tartar is half an ounce. The sulphur may be taken in West India molasses; the others dissolved in water. The Cream of Tartar is a *hydragogue* cathartic and is often used with sulphur, or senna, to remove *dropsical* accumulations.

Monosulphite of sodium, six grains a day, is said to cause rapid elimination of lead.

Care of the Eyes.

Remember the adage, "Do not rub the eye, except with the elbow."

Rubbing is almost sure to set up inflammation, especially when there is any foreign substance in the eye. If left alone the eye is generally soon relieved of floating dust or motes by the flow of tears excited by the irritation.

Looking at the unclouded sun, or its beams reflected from the surface of water, or any other smooth, bright surface, is injurious to the eyes. Let the eye be accustomed to remote, as well as near objects, lest you become near-sighted.

Overtaxation hurts the eye as quickly as any other organ or part of the body.

Spectacles or artificial lenses may be used if necessary, but only to avoid any straining of the eyes. Eye-cups, and all severe handling of the eyes should be avoided, but daily washing in pure, cold water for a moment will not injure. Ophthalmia (inflammation of the eye or eyes) should be treated on general principles by correcting all bad habits. In case of any severe injury of the eye, not understood by yourself, consult a specialist in whom you have confidence.

Nature of Disease.

The acknowledged fatality of pulmonary Consumption, as once considered, was finely told by Bryant, when speaking of the consumptive, in these words:

"The fields for thee have no medicinal leaf,
And the vexed ore no mineral of power;
And they who love thee wait in anxious grief,
Till the slow plague shall bring the fatal hour."

The poet, like many others, was looking for some *material* specific to cure this dread malady. But none was ever found. There is no specific for sin but to stop sinning; no cure for disease but understanding.

Science is possible only because the laws of the universe, as manifested in nature and in man, are perfect and unchangeable. Fire will continue to burn to the end of time, and disease will continue to mock the efforts of physicians to

save by leaf or mineral. The hidden cause must be found and removed or no cure is possible. We shall find the primal cause of disease, not with the microscope on the material plane of being, but with logic and mental illumination on the psychic plane of being. Consumption is cured chiefly by the right use of air, food and exercise.

Disease can be practically stamped out, but it can be stamped out, not by any poisonous drug, nor by any wonderful medical discovery, but by a popular health education.

We aim at a revolution (through evolution) in the practice of Medicine. Ideas for the most part must take the place now held by drugs. Etiopathic (cure by removing the cause of the difficulty) Medicine is the only true system of Practice. We must remove the cause that the effect may cease.

The following pages, entitled "Technics of Medicine," were at first published under the name of Key to Medicine. They will be found convenient for reference and will even repay careful study, especially on the part of teachers.

Technics of Medicine.

A.

Ab'domen, The great cavity of the body that contains the digestive viscera. It is bounded by the diaphragm above, the spinal column behind, the abdominal walls at the front and sides, and the pelvis below. It is also called the "belly", or peritoneal cavity. It takes the name of abdomen from a Latin word signifying to "conceal", because it hides or conceals the abdominal viscera, including the liver, stomach, intestines, spleen, pancreas, kidneys &c.

Abductor, A name given to muscles that draw some part away from the median or middle line of the body, hand or foot.

Abiogen'esis, A modern term for "spontaneous generation." The production of living organisms directly from inorganic matter. It is a problem widely affirmed and denied. It has been affirmed by Haeckel, Huxley, Bastian and other distinguished writers and philosophers of both ancient and modern times, but is still denied by many medical authors of the present day. Baker and Harris in Kirkes' Physiology (1889, p. 7) say: "It is now generally believed that every cell is descended from some pre-existing cell". This statement denying what is called spontaneous generation is doubtless true of all higher classes of animals and plants, but it is probably not true, cannot be true of the lowest organic form. And here logic comes to our aid. The first organic cell ever produced did not descend from any pre-existing cell for the simple reason that being the first there could not possibly be any pre-existing cell. The first organic form must necessarily be the first, and must have been produced or formed directly from unorganized matter, as matter itself, (if we distinguish matter from force, Spirit, or immaterial substance) was formed and still is out of immaterial substance which underlies and sustains all material things.

Thousands of experiments have been performed with the hope of settling forever the question of spontaneous generation, which is a fundamental one in biology. Both sides claim

the victory. The experiments are not conclusive because in shutting off all access of germs and spores, oxygen has also been excluded, and thus the conditions necessary for germination have been destroyed. There can be no germination without oxygen. But logic settles the question at once; and logic places it just where the writers of antiquity left it, viz: that all higher classes of animals and plants are produced by parent forms from eggs, seed or germs; while the very lowest organic form is produced, and always has been, by what we call spontaneous generation, i.e., directly from unorganized matter.

We do not accept the term Abiogenesis as synonymous with spontaneous generation. The former implies "born or begotten without life", which is manifestly absurd. Life is present even in the mineral.

Ablu'tion, Washing or cleansing.

Abnor'mal, Unnatural; deviating from law, or from the usual course.

Abor'tion, Expulsion, or death of the embryo or fœtus, before it is viable (able to live).

Ab'scess. An abnormal cavity filled with pus.

Abra'sion, A superficial excoriation with loss of substance in the form of shreds.

Absorp'tion, The process by which the lymphatic vessels take up and carry into the circulation and body fluids and other matters of great tenuity, for no others can pass the lymphatics.

Aca'cia, Gum Arabic, or the tree that produces it.

Ac'arus, The mite; a parasite.

Acces'sion, The beginning, or onset of disease.

Accouche'ment, The French term for delivery of a child. The act of childbirth.

Accoucheur', The surgeon or male medical attendant at childbirth.

Accoucheuse', A midwife.

A. C. E. Mixture, An anæsthetic consisting of alcohol, one part; chloroform, two parts; and ether three parts.

Acetab'ulum, Socket of the hip bone. It receives the head of the femur.

Acetan'ilide, Phenyl-acetamide. See "Antifebrin" which is the trade-mark for this drug. It has a depressing action upon the heart and is capable of producing insensibility and paralysis.

Acet'ic, Pertaining to acetum or vinegar.

Ac'etone, An inflammable liquid sometimes developed

in the body of a drunkard and rendering it liable to be consumed.

Achil'lea, Milfoil or Yarrow. It has been recommended as a remedy in intermittents, and other fevers.

Achil'lis Tendo, Tendon of Achil'les. The heel cord.

Ac'id, In common language, a substance having a sour taste. In chemical reactions an acid changes vegetable blue colors to red. In combination with an earth, an alkali, or a metalic oxide, an acid forms a salt. The three most noted acids are the Hydrochloric, or Muriatic, the Sulphuric, and the Nitric. We might mention, also, the acetic, tannic, chromic, gallic, citric, picric, formic, prussic, lactic, oxalic, fluoric, phosphoric, nitro-hydrochloric (aqua regia, or royal water; because it dissolves gold), and the two acids found in the bile (taurocholic, and glychocholic).

Ac'ne, Pimples or pustules on the face. It is often produced by giving bromides.

Ac'onite, A genus of poisonous plants. Wolfsbane, or Monkshood. Much used by some physicians in the treatment of fevers. Aconite is a powerful narcotic poison. Its natural effect is to reduce muscular force and paralize both nerves and muscles. It is said to reduce fever because it reduces the force and action of the heart. This is a temporary effect. The permanent effect is to produce weakness, rapid pulse and paralysis. The tincture of the root is used. Fleming's tincture is nearly twice the strength of the official tincture. Dose of the latter 1 minim (one sixtieth of a dram) in water and "repeated as needed" , is the language of a late author; another author says "every quarter of an an hour till the pulse and temperature are reduced".

All admit it is not to be given in asthenic cases; i. e., in cases of weakness, or debility. It is variously classified as antipyretic, anodyne, sedative, narcotic, and soporific. We know no good reason why it should be given at all. The true way to reduce fever is to remove the disturbing cause.

Acro'leine, An acrid, poisonous substance formed during distillation of fats. It is sometimes present in glycerine, unless the latter is distilled, and is often found in burnt fats. For this reason frying is an objectionable mode of cooking.

Actual cau'tery, Burning by the use of hot iron.

Acupunc'ture, Puncture by use of one or more needles.

Acute', Sharp, rapid, or severe; applied to disease.

Adam's apple, The bunch in the neck formed by that portion of the larynx called the thyroid cartilage.

Addison's Disease, Bronzed skin disease. A condition marked by a peculiar change in spots of color of the skin, anæmia, general languor and debility, and supposed to be connected with a morbid change in the supra-renal capsules. The cause of this complaint is not well understood. The bronzed skin alone may or may not be connected with the disease.

Adduct'or, A muscle that draws a part towards the median line of the body, foot, or hand.

Adenol'ogy, Science, or study of the glandular system.

Adeno'ma, A tumor of a gland.

A'deps, Lard.

Adhe'sion, The growing together of parts naturally separate.

Ad'ipocere', A wax-like substance into which fleshy tissue is sometimes formed by the action of moisture and the exclusion of air, as when a body lies a long time under water, or buried in a wet place.

Adipose', Fatty.

Ad'juvant, A medicine used in aid of another.

Adoles'cence, The period of youth, from twelve to twenty-five.

A'erate, To impregnate with air, or oxygen.

Affection, A synonym for disease.

Af'ferent, Bearing toward the center. The afferent are sensory nerves.

Affu'sion, The act of pouring water upon the body or some part of it.

Af'ter-birth. Another name for the placenta.

Ag'aric, A genus of fungi (mushrooms) comprehending many species, some of which are eaten as food and some are poisonous. The chief edible variety is the Agar'icus Campestris. The white or purging Ag'aric grows as a parasite upon the European Larch. By some authors it is recommended for night sweats in doses of one or two grains.

Ag'nail, A synonym for hangnail. It is a minute portion of the cuticle split up from the root of the nail.

Ag'rimony, A mild vegetable astringent.

Ailan'thus, Tree of Heaven. It is a bitter tonic and drastic purgative. Dose of the fluid extract 10 to 20 minims.

Alæ, Plural, and genitive case of ala (wing).

Albugin'ea, An adjective signifying white, or whitish. The tunica albuginea is the inner covering of the testicle and ovary.

Albu'men, A substance found in the white of an egg,

blood, serum and flesh of animals. Mulder held that albumen was first formed in the vegetable. It contains the four essential elements of organized bodies and a little sulphur.

Albu'minoid, Resembling or containing albumen. The fibrin of flesh and the gluten of wheat are albuminoids.

Albuminu'ria, The presence of albumen in the urine. It indicates an excess of albuminoids in the diet.

Al'chemy, The pretended art of changing the baser metals into gold and silver, and of preparing an elixir by which disease and death might be avoided. It is the father of modern chemistry.

Al'cohol, Ardent spirit, or spirits of wine. The intoxicating principle of all spirituous liquors. It is obtained by fermenting fruit or grain rich in starch or sugar, and from the fermented liquid the alcohol is separated by distillation. Absolute alcohol contains no water. It is lighter than water; ignites readily, and burns with a blue flame without smoke. Cider, wine and ale, are fermented liquors. Alcohol, brandy, whiskey and rum, are distilled liquors. Rum is distilled from molasses. "Proof spirit" contains fifty per cent of water, and is the same as dilute alcohol. It takes, however, in the new Pharmacopœia (1880), 53 gallons of absolute alcohol, and 50.716 gallons of water to make 100 gallons of dilute alcohol on account of the contraction of volume when the two are mixed. The contraction is over three per cent.

All unrectified alcohol from grain, starch, or potatoes, contains what is known as "Fusel-oil". This latter substance is not an oil, however, but an alcohol. It is known to the chemist as Amyl alcohol, or "Potato Spirit". It is poisonous even when inhaled.

Rectified alcohol is safer for medical purposes than whiskey or brandy that contain more or less fusel oil. Dilute alcohol is an excellent wash to prevent bed sores. Rectified spirit, or other distilled liquors that are sufficiently aged to have the fusel oil oxidized, are among our most valuable antiseptics. They are by many physicians considered valuable in ADVANCED STAGES of consumption, in lumbar abscess, and cases of suppuration; in snake bites; sunstroke; typhoid fever; small pox; and in some cases of Zymosis (conditions of fermentation).

In sleeplessness from exhaustion some spirituous liquor is better and safer than any narcotic. At the present time however, it is so difficult to obtain pure liquors that it is more or less dangerous to use any at all, even as a medicine. The irritating and poisonous qualities of fusel oil (amyl alcohol),

and methyl alcohol are discernible even if present to the extent of one tenth of one per cent in alcohol. Alcohol intended only for use in the arts is sometimes contaminated with ten per cent of methyl alcohol in order to prevent its use for drinking purposes. Thus contaminated it is very dangerous for internal use.

Alcohol must be properly diluted with water, milk, lemonade, or raw egg, for internal use.

Al'etris farino'sa, Star grass. Unicorn root. A uterine tonic. Dose of fluid extract 20 minims.

Aliena'tion, Mental derangement; insanity.

Alimen'tary canal, The digestive tube, extending from the lips to the ilio cæcal valve, or colon.

Al'kali, A substance which is soluble in water, has an acrid or caustic taste, restores to a blue color an infusion of litmus which has been reddened by acids, and unites with acids to form salts.

Al'iment. Food. Any substance capable of nourishing the body, or repairing its waste when introduced into the system. It is properly confined to organized bodies. Food was divided by Liebig into two classes—nitrogenous and non-nitrogenous. The former is supposed to supply nutriment to the various tissues of the body; and the latter heat and muscular energy, but both undoubtedly supply material for energy, or at least promote it. Starch, fat and sugar, are non-nitrogenous,

Al'kaloid, Resembling an alkali. The alkaloids are nitrogenous, organic compounds, and are usually of vegetable origin. Most of them are poisonous, and also solid; but nicotin and conein are liquid.

Al'kanet, The root of Anchu'sa tincto'ria, used chiefly as a coloring material.

Allan'tois, A membrane or sack of the human embryo which helps to form the bladder and urachus of the fœtus.

Al'lium, Garlic. Infused in oil of almonds and colored with alkanet, it is said to have once formed a nostrum for deafness—Taylor's Remedy.

Al'lium, Ce'pa, The common onion.

Al'lium Por'rum, The leek; possessing properties similar to the onion and garlic. The Allium is a native of Sicily.

Allop'athy, A term devised by Hahnemann to designate a practice of medicine whose characteristic was to obscure symptoms and otherwise change the character of disease by the use of alteratives. It is now used to designate the so-called regular practice in distinction from Homœopathic and Eclectic practice.

Allot'ropism, Existing in different forms, or modes; as carbon exists in the form of charcoal, of the diamond, and of plumbago, or black lead.

Al'mond, The fruit of the almond tree. The technical term is amyg'dala(almond).

Al'nus, Tag alder. The bark is bitter and astringent. Has been used as an alterative and tonic.

Al'oe, A genus of plants. The juice is used in medicine. It is intensely bitter and for that reason has been called "pic'ria" (bitterness). It has been used as a cathartic, emmenagogue and an anthelmintic. It affects chiefly the rectum. The Soc'otrine aloe is now the only kind that is official. It comes from Soco'tra and Eastern Africa. Tincture of aloes is made of equal parts of aloes and black liquorice macerated in diluted alcohol. The proportions are 10, 10, & 100. Mixed with canella, aloes forms "Hiera picra", literally "Holy bitter". With mastic it forms "Lady Webster's Dinner Pills"; and with myrrh, "Rufus's Pills".

The most palatable preparation of aloes is the "Baume de Vie", or compound decoction of aloes. Dose one-half to two fluid ounces. It contains aloes, myrrh, saffron, liquorice, carbonate of potassium, and tincture of cardamom. [See "Companion to the U. S. Pharmacopœia."

Alope'cia, A general term applied to baldness.

Al'terative, A remedy that is supposed to produce some change in the system. Mercury and iodine may be called the great alteratives in Allopathic practice. The Alterative Compound recommended by Sims in scrofula consists of fluid extracts of sarsaparilla, stillingia, burdock root, and garget root, of each three fluid ounces, and of prickly ash bark one fluid ounce. Dose, 1 to 2 fluid drams. We advise omission of the garget root

Althæ'a, Marsh-mallow. Employed to make a mucilaginous drink.

Al'um, A double salt. It is a sulphate of aluminum and potassium. This is the true alum amd is called the "POTASSA ALUM", to distinguish it from ammonia alum which is a sulphate of aluminum and ammonium.

The article sold for alum in this country is ammonia alum; and to obtain the true alum it will be necessary to specify POTASSA ALUM. Alum is an astringent and is used as a styptic for checking passive hemorrhages, and also as a wash for canker sores of the mouth, vagina, &c. DRIED ALUM is escharotic. It is prepared by heating alum to drive off the water of crystallization, after which the alum falls into a

powder. It is applied to proud flesh, and as a styptic to the sockets of the gums after the extraction of teeth.

Alu'minum, A very hard, light, ductile, silver white metal which forms the base of common clay. Sulphate of aluminum is antiseptic and detergent to ulcers. It has been used to preserve dead bodies by injecting it into the arteries. As a wash, a five per cent solution is used. A concentrated solution is escharotic.

Al'vine, Pertaining to the belly or abdomen.

Amauro'sis, Loss of sight from paralysis of the optic nerve. The first degree of amaurosis is now called amblyopia (obscuration).

Am'bergris, A product from the intestines of the sperm whale. It is slightly antispasmodic, and has been used also as a perfume.

Amblyopia, Dullness of vision; feebleness of sight.

Ambro'sia, The food of the immortals or of the gods. A term used in mythology.

Am'bulance, A military moving hospital, or a vehicle for conveying the sick and wounded.

Amenorrhœ'a, Retention or suppression of the menses.

Ammo'nia, A compound of nitrogen and hydrogen gases. It took its name from Jupiter Ammon in the deserts of Lib'ya. It was found in the horns of harts, in hides &c., but is now obtained from the liquor of gas works. A'qua ammonia (water of ammonia) contains 10 per cent of ammoniacal gas. A'qua for'tior ammonia has 28 per cent of the gas in solution. It is caustic, and much injury may be done by inhaling the gas that escapes from its solutions. Spirit of ammonia is a solution of ammoniacal gas in spirit or alcohol. The ammonia (or hartshorn) liniment contains 30 per cent of aqua ammonia and 70 per cent of cottonseed oil.

Am'nion. The innermost of the three membranes that envelope the fetus and inclose the liquor amnii. The middle layer is the chorion, and the outer is the membrana decidua.

Amœ'ba, A single celled, protoplasmic organism, constantly undergoing changes of form.

Amor'phous, Without form, not crystallized.

Ampere', A unit of measure of an electric current. It is the force of one volt on a resistance of one ohm.

Amputa'tion, The cutting off of a limb or some part of the body.

Am'ulet, Something worn about the person as a charm for the purpose of warding off danger or disease.

Amyg'dala, The tonsils; literally, almonds. There are

two kinds of almonds; the sweet and the bitter. The latter is poisonous. The oil of sweet almonds is a bland, demulcent. The bitter almond contains Prussic acid.

Am'yloid, or amylaceous, Starch-like.

Amyl'ic alcohol, Fusel oil. Very poisonous.

Am'ylolyt'ic, Pertaining to something that tends to loosen or break up starch.

Am'ylum, Starch.

Anabolism, The process of building up. Constructive metabolism.

Anæ'mia, Bloodless. Usually applied to a condition of the blood when it is deficient in red corpuscles. Indicated by pallor of the lips, ears, tongue, and also by debility.

Anæsthe'sia, Insensibility.

Anæsthet'ic, A substance that produces insensibility. The principle anæsthetics in use are nitrous oxide, chloroform, and ether.

Analge'sic, Something tending to relieve or deaden pain.

An'alogue, A part in an organized being that has the same or similar function as some part in another organized being. A corresponding part.

Anal'ysis, The breaking up or resolving of compound bodies into their original elements.

An'aphrodis'iac, An agent which allays or tends to allay the sexual passion.

Anasar'ca, General dropsy; or dropsy of the flesh.

Anaspa'dias, An abnormal opening of the urethra upon the upper surface of the penis.

Anastomo'sis, The intercommunication of blood vessels. Inosculation from the Latin signifies the same thing.

Anat'omy, The cutting up or dissection of bodies. More commonly understood as the science, or study, of the structure of organized beings.

Anchylo'sis, Union of the bones forming a joint and destroying all motion of that joint. It implies a stiff joint. Spelled, also, ankylosis.

Anchylosto'mum, A worm found in the intestine. The duodenal variety is found in Egypt.

Androg'yna, A female with genital organs similar to those of the male.

An'eurism, A pulsating arterial tumor.

Angeio'ma, A blood vessel tumor; vascular tumor.

Angi'na, A choking sensation.

Angi'na pec'toris, Angina of the breast. There is

great pain abont the heart and large blood vessels of the chest and arm with a choking sensation.

An'glicus su'dor, English sweating disease. An epidemic that appeared in England in 1486 and also about the middle of the sixteenth century.

Anhy'dride, An oxide that contains no water; dry.

An'iline, A poisonous alkaloid derived from coal tar and with which aniline dyes are produced.

Animal, A breathing, organic being.

Animal-charcoal, Bone-black, or ivory-black. It is produced by charring bones.

Animal'cule, A microscopic, or very minute animal.

Ankylo'sis, Unnatural union of bones, forming a stiff joint.

Ankylosto'mum, A worm sometimes found in the duodenum. Anchylostomum.

Annat'to, or **Annotto,** A vegetable dye used by some for coloring butter, cheese, liquors, &c.

An'ode, The pole of the battery from which the electric current comes. The positive pole.

An'odyne, Without pain. A substance capable of destroying, diminishing, or removing pain.

Anom'alous, Deviation from rule. Irregular.

Anorex'ia, Loss of appetite. It arises from excess of food, or aversion of the mind.

Antac'id, Something that will neutralize acidity.

Antal'gic. Opposed to pain. Anodyne.

Antaphrodis'iac, Opposed to venereal desires.

Antasthmat'ic, Opposed to asthma.

Anteflex'ion, Bent forwards, as the fore-arm is flexed.

Ante-par'tum, Before delivery in childbirth.

Antever'sion, Turning or tipping forward, as of the womb.

Anthelmin'tic, Against worms. Vermifuge.

An'themis, Chamomile. A bitter tonic.

An'ther, That part of a flower at the end of the stamen that contains the pollen.

An'thrax, A kind of carbuncle. When malignant it is called a malignant pustule.

An'thropoid, Resembling man.

Anthropol'ogy, Study, or science of man.

An'tidote, Something tending to counteract or supposed to counteract the effect of poison,

Antifeb'rile, Tending to reduce fever.

Antifeb'rin, The trade-mark of a dangerous drug much

given of late in so-called regular practice to reduce pain and fever. It is made by the action of glacial acetic acid upon aniline and its chemical name is acetanilide or phenyl-acetamide. It tends to produce insensibility and paralysis. In other words it is a poison.

The term "Antifebrin" is a trade mark, but the same substance is put up and sold as "Acetanilide", It has been recommended by some authors in doses varying from 2 to 15 grains., although untoward symptoms have been known to be produced by less than 5 grains, It is a white powder, soluble in alcohol, but nearly insoluble in water. Its use is now becoming obsolete.

An'timony, A tin-white substance having a metallic lustre. Its salts and combinations were at one time much used in medicine. "Tartar Emetic" is one of its well known preparations. It is a very nauseating and depressing drug, and is now rarely used.

Antiparasit'ic, Opposed to parasites.

Antiphlogis'tic, Opposed to inflammation. An old term now nearly obsolete.

Antipyret'ic, Opposed to fever.

Antipy'rin, A poisonous product of coal tar. The process by which it is made is patented and not known by physicians. It is a white powder, somewhat bitter, and soluble in water, It has been much given of late to reduce fever and kill pain. It kills by paralyzing the nerves. Doses not sufficient to produce death may bring on convulsions, buzzing in the head, blueness of the lips, cold feet and chilly sensations. It shrivels the blood corpuscles and tends to produce congestion of the brain and meninges. Untoward effects have been noticed in numerous instances from administering 4 to 10 grains, and yet a distinguished author gives the dose as 5 to 20 grains. Gould's New Medical Dictionary puts the adult dose at 5 to 10 grains "every hour for two or three hours". Every dose tends to heart failure. When medicine becomes a popular science we shall reduce both fever and pain by removing the cause, and not by the use of dangerous drugs.

Antiscorbu'tic, Opposed to scurvy. Fresh provisions and the juice of acid fruits are the best antiscorbutics.

Antisep'tic, Opposed to putrefaction. Ozone, oxygen, peroxide of hydrogen, camphor water, boric acid, cider vinegar, salt and ethyl alcohol are among the best known antiseptics.

Antizymot'ic, Preventing fermentation. Antiseptics are also antizymotic. See antiseptic.

A'nus, Orifice of the large bowel at the lower end of the rectum.

Aor'ta, The great arterial trunk which arises from the left ventricle of the heart, gives off about sixty branches, and terminates in the common iliac arteries.

Ap'athy, Want of feeling.

Ape'rient, A medicine supposed to have power to open the bowels.

Apha'sia, Want of speech from some lesion of the brain.

Apho'nia, Loss of voice.

Aphrodis'iac, Stimulating the sexual passion.

Aph'thæ, Canker of the mouth. Thrush.

A'piol, A colorless liquid derived from parsley seed. In doses of five to ten drops it is an excitant like coffee. Is aromatic and diuretic.

Apnœ'a, Without breath. Partial or complete suspension, or failure of respiration.

Apoc'ynum, Dog's bane. There are two or more kinds of apocynum. The Ascle'pias Tubero'sa is the Orange Apocynum. The Apocynum Androsemifo'lium is often called "bitter root." It is not readily obtained in the market. It is emetic, diaphoretic and laxative.

Apoc'ynum Cannab'inum has been erroneously called Indian hemp. It is an American plant. (The Indian hemp is the Cannabis Indica or "Hashish.") The Apocynum Cannabinum (American Cannabis) does not intoxicate like the Indian Cannabis. It is a powerful emetic and hydragogue cathartic, and for this reason has been strongly recommended in dropsy to remove accumulations of serum. Dose of the fluid extract 3 to 30 minims.

Apollina'ris Water, A German alkaline mineral water, highly charged with carbonic acid gas. Drank in rheumatism, and also at the table to some extent.

Apomor'phia, A greyish powder derived from morphine. It is a quick and sure emetic, but dangerous, and may produce collapse and death. Usually given by use of the hypodermic syringe. Dose one-thirtieth of a grain.

Ap'oplexy, A sudden loss of consciousness and voluntary motion from any undue pressure upon the brain. It is distinguished from epilepsy by the absence of convulsive movements. It may arise from congestion, embolism, or hemorrhage of the brain.

Apoth'ecary, A shop keeper. In common language, a druggist.

Appendicitis, Inflammation of the appendix vermiformis. A possible, but generally fictitious disease that appeared in medical literature about A. D. 1890 and served the profession as an excuse for performing surgical operations.

Appetite, A desire for food; also any natural desire.

A'qua, Water, H_2O. 79-100 of the blood is water.

A'qua Re'gia, A mixture of nitric and hydrochloric acids that dissolves gold. It is also called nitromuriatic acid or nitrohydrochloric acid. The latest formula for making it is to combine 4 parts nitric with 15 parts of muriatic (hydrochloric) acid. Diluted with 40 times it volume of distilled water, and given in doses of 5 to 10 minims, it acts powerfully upon the liver in jaundice. It is given through a glass tube or straw, to prevent injury to the teeth.

Ar'ack A spirituous liquor of India, distilled from rice or cocoanut juice.

Ar'bor vi'tæ, "Tree of Life." A term applied to the arborescent appearance of a section of the cerebellum, and also of the folds of the interior of the cervix uteri of one who has never borne children.

Arc, Part of a circle; also the stream of light between the carbons of an arc lamp.

Arca'num, A secret; a mystery.

Ar'cus, A bow or arch.

Ar'dor, Burning, or great heat.

Ar'dor uri'næ, Scalding of the urine.

Argen'tum, Silver.

Are'ola, Diminutive of area. Applied also to the brownish space around the nipple.

Arm'ature, A piece of soft iron placed upon the extremities of a horse shoe magnet or within the helix of a battery. That part of a dynamo in which the current is induced.

Ar'nica, Leopard's bane. A poisonous plant. The tincture has been employed as a local application in sprains and bruises. It sometimes produces irritation of the skin.

Aro'ma, The fragrant emanation from various vegetable substances.

Ar'rowroot, A kind of starch prepared from the roots of the Maranta and Curcuma of the West Indies and South America.

Ar'senic, (or **arsenious acid,**) A violent corrosive poison acting with cumulative effect. Notwithstanding its deadly nature, it is much used in ordinary practice as a medicine, chiefly in the form of "Fowler's solution," in doses of

3 to 5 drops, or minims. It has been used but with doubtful propriety as an alterative, tonic, antiperiodic, in neuralgia, chorea, epilepsy, skin disease, syphilis, and sometimes also, for stomach difficulties. It is used in skin diseases of a dry scaly nature and yet it is known to sooner or later produce eruptions upon the skin. It is a deadly poison and yet we are told it is a tonic, and stimulates mental activity. Tests for arsenic it must be remembered are subject to error on account of the liability of traces of arsenic in the reagents used. Two grains of arsenic is considered a fatal dose unless rejected by the stomach. Authors speak of "poisonous doses", as though a small dose is non-poisonous. Such language is misleading. Any part of a grain, however small, so long as it can be called arsenic is poisonous.

Artificial respira'tion, Various methods used to get air into the lungs of persons asphyxiated. Hall's method consists in turning the body alternately upon the side and face; Sylvester's in moving the arms of the patient up and down; and Howard's by pressing upon the lower ribs at intervals of two or three seconds to expel the air. The lungs may also be partially inflated by closing the nostrils and blowing into the mouth, or by careful use of the bellows.

Arthri'tis, Inflammation of a joint, or joints,

Arthrot'omy, Cutting into a joint.

Artic'ulo Mor'tis, Point of death. Act of dying.

Asafœt'ida, A fetid gum from the root of the Ferula, and used in Asia as a condiment. It is sometimes though rarely used as a nervine or antispasmodic in convulsions, hysteria, asthma, &c. Dose 3 to 15 grains.

As'caris, A genus of worms found in the intestine, including the round worms of the stomach (Lumbricoides), and the thread worm of the rectum. The latter is the As'caris Vermicular'is.

Asci'tes, Abdominal dropsy. The term signifies a "leathern sack" in which water was formerly carried.

Ascle'pias, Pleurisy root. Named from Esculapius. It is a powerful diaphoretic. Dose of the fluid extract, 1 to 2 fluidrachms. This is the Ascle'pias Tubero'sa.

In the Practioner's Monthly (No. 2, p. 46), I find Asclepias Syriaca, (called by Gray, A. Cornuti), Milkweed, and also called Silkweed, highly recommended for renal dropsy, as it removes the accumulated fluid by acting on the kidneys and bowels. The decoction is used, or the tincture, prepared from the root bark. Two ounces of the decoction, or one dram of the tincture is given four or five times daily. For making the

tincture use one ounce of the root bark in four ounces of alcohol; and for the decoction two ounces of root bark in three pints of water and boil down one half. It is a diuretic of power and certainty.

Ascle'pias Cornu'ti, Milkweed, Silkweed, or Wild Cotton. The root is the part used. It is much like the former Asclepias.

Ascle'pias Incarna'ta, White Indian Hemp. This plant is diuretic, diaphoretic, anthelmintic, and in larger doses, emetic and cathartic. The usual dose is 10 to 40 minims of the fluid extract.

A'sepsis, Absence of all septic material; free from infectious matter.

Asphyx'ia, (Pulseless) Paralysis of the respiratory center, and the effect of carbon dioxide in the blood. Suspended animation from want of air, or oxygen.

As'pirator, An instrument for withdrawing any fluid, pus or serum, from an internal, or deep cavity.

Asthe'nia, Absence or loss of strength,

Asth'ma, Difficulty of breathing. Heaves in horses. A peculiar squeaking noise is heard in the lungs of asthmatic patients. Cause not well understood. Constitutional treatment is the only permanent cure.

Astig'matism, A defect in the eye due to imperfect curvature of the globe, or crystalline lens, or to unequal density of the refractive media, which prevents the formation of a perfect focus, and causes a distant object like a star to twinkle or scintillate.

As'tral body, A semi-material substance forming the denser part of the soul and connecting it with the physical body.

Astrin'gent, Producing contraction of organic tissues and thus arresting hemorrhage and various secretions. Tannin, alum and oak bark, have this property.

Asy'lum, A place of refuge.

Atax'ia, Want of order.

Athero'ma, Primarily a tumor filled with soft matter like pap; fatty degeneration of the walls of the arteries.

At'omizer, An instrument for converting a liquid into a spray.

Atre'sia, The occlusion or imperforation of a natural opening, or canal, as of the anus, uterus, or vagina.

At'rophy, A wasting away from want of nourishment.

At'ropine, The active principle of belladonna. It dilates the pupil when applied to the eye, and for this reason has

been extensively used in ophthalmic practice. In small doses it is said to stimulate, but in larger doses paralyzes the heart, lungs, and muscles. It is a deadly narcotic.

Attar of rose, Oil of rose. Used as a perfume.

Au'diphone, An instrument for improving the power of hearing.

Au'ra, A gentle breath of air. A vapor. A sensation of vapor passing from the limbs towards the head which is sometimes felt by the epileptic just before an attack of epilepsy.

Auran'tium, Orange. The fruit of the Cit'rus Auran'tium, (t pronounced like sh).

Au'rist, One who treats disease of the ear.

Au'rum, Gold. The chloride of gold is sometimes given to stimulate the stomach and brain. It is a violent poison. The usual dose is one-fiftieth of a grain.

Ausculta'tion, Act of listening. The stethoscope is used to facilitate the process of studying the sound of the heart, lungs &c.

Automat'ic, Applied to functions that are performed without the influence of the human will, like the winking of the eye. Self-acting.

Au'topsy, Self-inspecting, or seeing for one's own self. Post mortem examination.

Avoirdupois', The common weight used for all commodities except medicines, and precious stones. The pound is divided into 16 ounces, and the ounce into 16 drams. The pound contains 7000 grains Troy, and the ounce, 437½ grains. The Troy ounce contains 480 grains, and is therefore larger than the ounce avoirdupois.

B.

Bacil'lus, A little rod; harmless in itself, but said by the profession to be the cause of nearly all forms of disease. It will be seen later that the cause of disease—the primary cause, which in the true sense is the only cause—is not material but mental; and the remedy, not drugs but understanding, or MENTAL ILLUMINATION.

Bacte'ria, A little staff; another term for micro-organisms, or bacilli.

Bacteriol'ogy, That branch of study which by the aid of the microscope consists in identifying the minute forms often found in the pathological conditions of certain organs, or parts of organic bodies; of cultivating such forms; and observing the effects of such forms when brought in contact with animal tissues. Its importance is now greatly overestimated, while the true cause of disease is almost wholly ignored or entirely lost sight of.

Bag-of-waters, The membranes or sack enclosing the liquor amnii in which the fœtus floats. During the natural dilatation of the os uteri in child-birth the Bag-of.waters projects into the vagina somewhat in advance of the fœtal head, and is usually ruptured and the waters discharged before the birth of the child.

Balani'tis, Inflammation of the glans penis, literally of the acorn.

Ballotte'ment, One of the methods for diagnosing pregnancy during the fifth, sixth and seventh months. The uterus is tossed up by the finger inserted into the vagina, and if a fœtus be present it falls heavily like a body in water upon the finger again.

Balm, Anything that soothes or mitigates pain. A fragrant herb,

Bal'mony, An indigenous plant called Snakehead. It is very bitter.

Balneol'ogy, Treatise or study of baths.

Bal'sam, An oleo-resinous vegetable substance that exudes from certain trees. Canada Balsam is a kind of turpentine gathered from the natural blisters found on the bark of the Ab'ies bal'samum (Fir balsam). Balsam of Tolu is the basis of many cough mixtures,

Bamboo-brier, A kind of Smilax or sarsaparilla found in the Southern States. Has been used in scrofula.

Baptis'ia, Wild Indigo. Bark of the root and leaves. Reputed to be antiseptic and discutient, Used as a local application to foul ulcers and malignant sores, It may be made into an ointment for external application.

The leaves of Wild Indigo applied in fomentations have discussed tumors and swellings of the female breast resembling scirrhus.

Barom'eter, An instrument for determining the weight or pressure of the atmosphere, and in this way the height of mountains.

Battery, One or more cells that produce electricity. the cells contain two elements of different substances, usually zinc and carbon, and a liquid. A collection of Leyden jars, charged with electricity, is also called a battery,

Battey's Operation, Excision of the ovaries,

Bat'tledore placenta, One in which the umbilical cord is attached to the margin, or circumference of the placenta.

Baunscheid'ism, A mode of treating disease, especially rheumatism, by the use of an instrument called the "Life Awakener". It contained a number of sharp needles set firmly in a plate moved by a spring. By placing the end of the instrument against the skin of the patient and pulling out the handle to give force to the spring, a number of punctures were made in the skin, as often as the handle was drawn out and released, The needles were first dipped in oil of mustard, croton oil or other irritant. The treatment was named from the inventor.

Bayberry bark, (Myrica). Stimulant and astringent. With ginger and cayenne it forms Thompson's Composition powder. 1 pound bayberry, half pound ginger, 1 oz. cayenne. Some add cloves and powdered liquorice root.

Bay-rum, A preparation for the toilet made of oil of Myrcia (oil of bay) 16, oil of orange peel 1, oil of pimento (allspice) 1, alcohol 1000, and water 782 parts, mixed, shaken, allowed to stand for a week in a tightly corked bottle, then filtered. Mix the oils and alcohol first, then gradually add the water,

Belladon'na, Deadly Nightshade, This plant affects the sympathetic ganglia that control reflex action and thus paralyzes the circular fibres of the iris so that they have no power to contract. It is much used for this purpose both by Allopaths and Homeopaths. It checks all secretions when given internally except those of the bowels and kidneys. It raises the blood pressure and sometimes produces a rash like that of scarlet fever. It tends to produce headache, vertigo, blindness, delirium, paralysis, stupor and death. It is used in so called regular practice to check night sweats, to suppress the flow of milk, in laxative pills, in asthma, whooping cough, neuralgia, dysmenorrhœa, insomnia, incontinence of urine, inflammatory rheumatism, gout, and as an antidote to opium and

chloroform. Usual dose of the fluid extract of the leaves 3 to 5 minims; of the root 1 to 3 minims.

The stimulation of the heart under the use of belladonna is followed by subsequent relaxation and depression which may end in death. Externally belladonna has been applied to painful swellings and rheumatic joints, and over the lower abdomen in painful affections of the pelvic organs. It is applied in the form of plaster, ointment, or poultice. It is a powerful anodyne and narcotic. That it is really an antidote to opium and chloroform as many suppose, is at least uncertain. The alkaloid from belladonna is called atropine.

Bell's paralysis, Facial paralysis, or paralysis of the facial nerve.

Ben'ne oil, Oil of Ses'amum. A bland oil used for the hair. It keeps better than olive oil.

Benzoin' Odorif'erum, Spicewood. Fever Bush. Bark and berries. It is aromatic, tonic, and stimulant. Useful in all kinds of fevers. The decoction may be drank freely. Taken warm it promotes sweating.

Bergamot, oil of, An essential oil used as a perfume.

Bib'ulous, Having the property of absorbing moisture.

Bicus'pid, Having two points or cusps.

Bile, The juice secreted by the liver. It is mucilaginous and partly excrementitious.

Bil'iary, Pertaining to bile.

Bil'ious, A disordered condition of the bile. See Cholagogue.

Biol'ogy, The study or science of life as manifested in organized beings.

Bi'oplasm, Life-forming matter. Protoplasm.

Birds nest, Edible, The nest of a bird formed of a marine plant and cemented by the saliva of the birds. It is used in some countries as food.

Birth, The delivery of a child. The period or time when human life commences.

Birth mark, Mother's mark. Nævus. It is caused by some sudden and powerful nervous impression of the mother upon the unborn child.

Bi-sexual, Having reproductive organs resembling both sexes. Hermaph'rodite.

Bis'muth, A metal. The subnitrate is sometimes used in medicine, in 15 grain doses two to three times per day, for canker of the stomach and bowels; also, for vomiting, purging, and dysentery. It is insoluble in the intestinal canal and is given ostensibly for its protective influence on the mu-

rous surfaces. It is liable to contain arsenic and therefore dangerous. As a topical application it has been used with some asserted success upon cancer of the mouth. It may serve to allay in some degree irritability.

Bis'toury, A small knife used in surgery.

Bitters, Medicines of bitter taste. Tonics.

Bitu'men, Mineral tar, or asphaltum. Petroleum. By distillation it yields naphtha, benzole, and various other substances.

Blennorrha'gia, An excessive discharge of mucus from the genital organs. Blennorrhœ'a.

Blood, The vital fluid that conveys nutriment to, and waste from, the various parts of the body. It consists of a liquid called plasma, or liquor sanguinis, and blood corpuscles. Healthy blood contains about 79 per cent of water and has a density of 1055. See Dutton's Anatomy, p. 19.

Bloodless operations, By use of elastic bandages the blood may be expelled from parts about to be amputated, and thus operations may be performed with very little loss of blood. Bloodless surgery. The Esmarch bandage is used for this purpose,

Borax, Borate of Sodium. Used as an antiseptic application for ulcers, canker, &c. Said to be emmenagogue. Dose in solution 15 grains.

Bot, The larva, or worm hatched from the eggs of the gad-fly. The fly deposits its eggs upon the limbs and sides of the horse and other animals that are more or less diseased, and these hatch into bots in the stomach and bowels whither they are conveyed by the animal itself. Animals properly fed and cared for, so as to be in healthy condition, do not suffer attacks of bots. It is said they have occasionally been found in man.

Bougie', An instrument used in surgery chiefly for introduction into the urethra.

Brash, Acrid eructations from the stomach. Pyrosis.

Break-bone fever, A kind of rheumatic fever which first appeared in the West Indies in 1827 and was called Dengue (Dandy). Its successful treatment in the southern states of North America by the use of Eupatorium or thoronghwort tea gave to that herb the name of "Boneset."

Bright's Disease, A term often loosely used for kidney complaints. By some, it is synonymous with Albuminuria; by others, with a fatty, or granular degeneration of the kidney. The acute form is called nephritis.

Bro'mum, or Bromine, A reddish-brown, liquid element.

giving off poisonous, irritating vapors. The salts of bromine (bromides) are given in Allopathic practice as hypnotics. One of its salts—Bromide of potassium in doses of 5 to 30 grains has been given for epilepsy, sleeplessness, asthma, as an alterative, and as an anaphrodisiac, and in delirium tremens. Its prolonged administration may produce acne, and paralysis of the nerves and muscles.

Bronchi, Branches of the trachea, or windpipe. The trachea divides into the right and left bronchus opposite the third dorsal vertebra. See "Trachea" in Anatomy.

Bronchi'tis, Inflammation of the bronchial tubes, or of the mucous membrane which lines them.

Bronchoph'ony (ch like k), The resonance or thrill of the voice within the bronchi, or windpipe. It is heard both in health and disease, and more distinctly in some persons than in others.

Bronchot'omy, Cutting open the bronchus.

Bryonia, A European plant. It is drastic cathartic. Has been given in dropsies, in pleurisy with effusion, and in some other complaints. Dose of the tincture 10 to 30 minims. Is used in Homeopathic practice.

Bu'bo, Inflammation and swelling of an inguinal gland, and as used by some authors, of an axillary gland. Usually attributed to syphilis, and often terminating in an abscess.

Bubon'ocele, Incomplete inguinal hernia, or hernial tumor of the groin.

Bu'chu, The African Barosma. Used in inflammation of the bladder and urethra as a stimulant to the kidneys. Dose of the fluid extract 10 to 30 minims. Its use was learned from the Hottentots.

Buck'thorn, A kind of Rhamnus which is sometimes used as a hydyagogue purgative in dropsy, but is mainly employed in combination with other cathartics. The berries are the part used. It is known as Rhamnus catharticus.

The Rhamnus frangula is the alder buckthorn, of which the old bark is sometimes used as a purgative. The fresh bark is a violent irritant.

Rhamnus purshiana is the California Buckthorn which is described as a tonic laxative, and is the principal ingredient of the well known "Cascara Cordial", prepared by Parke, Davis & Co,, and used for constipation. The bark (Chittem bark) is the part used.

Bun'ion, An enlargement and inflammation at the base of the great toe caused by wearing a boot that cramps the toe and turns it outward, thus straining the ligaments of the joint.

Burdock (Lappa), The bark of the root is used by botanic physicians in blood syrups. Is aperient and diuretic. Dose of the fluid extract 1 to 2 drams.

Bur'sa, A natural sac filled with fluid and placed beneath the tendon of a muscle to prevent wear, and irritation from friction.

C

Cachex'ia, A depraved condition of the general system, The word signifies "badness.

Cada'va, The dead body. A corpse.

Cade (Cad'inum), oil of, A good parasiticide. It is a thin tar-like liquid, and is used as an application in scabies, psoriasis, and cancerous affections.

Cæsa'rian Operation, The delivery of the child or fœtus by means of a surgical operation which includes abdominal and uterine section. It is said that Julius Cæsar was thus delivered. In the possible event of rupture of the uterus it might be necessary.

Cais'son Disease, Paralysis of the eye, apoplectic, or other symptoms that sometimes affect caisson workers. It is ascribed to the increased atmospheric pressure but may more likely be due to excess of carbon dioxide in the respired air.

Cal'abar Bean, The seed of the African Physostigma. A powerful poison. It is mainly employed by surgeons and oculists. to cause contraction of the pupil.

Cal'amus, A reed or writing pen of ancient times. Also the technical name of sweet flag.

Calca'reous, Having the nature of limestone.

Cal'cium, A metal, the base of lime and chalk. Quicklime is calcium oxide; slaked limed is calcium hydrate, and chalk is calcium carbonate. Quicklime is a powerful escharotic, and mixed with an equal part of caustic potassa forms the Vienna paste. The latter is a milder and more manageable caustic than pure potassa and is used to destroy fungous excrescences and malignant tumors. The two substances which form it are powdered and triturated together in a warm mortar.

Preparations of lime, usually lime water, are sometimes given to ill-nourished and pregnant females in order to furnish matter for the bones of the fœtus and thus prevent absorption which sometimes occurs and causes toothache in pregnancy.

Plaster-of-Paris is a common name for sulphate of calcium. It is a white powder which when stirred up with water to form a thin paste, sets to a hard mass in two or three minutes, and is used by dentists and surgeons for making moulds and plaster jackets.

Calcium sulphite is sometimes used to arrest fermentation in cider and fruit juices.

Sulphide of calcium (sulphurated lime) is used to arrest the formation of pus in acne, small pox, abscesses, and boils. It is a grayish powder and may be given in pills or granules. Dose, 1-6 to 2 grains, twice or three times per day for three days.

Chloride of lime is the "Bleaching Powder." It is sometimes used as a disinfectant for privies, water closets, etc.

Lime water is a solution of calcium hydrate in water. It contains only a small fraction (0,15) of one per cent of calcium hydrate (slaked lime).

Lime liniment consists of equal parts of limewater and oil, (cotton seed, olive, or oil of sweet almonds). Made with linseed oil it forms Carron oil. The lime liniment, and Carron oil are both used as an application to burns and scalds.

Lime water is used to counteract acidity of the stomach; in rickets to supply lime to promote ossification and hardening of the bone; and as a spray in croup or diphtheria. Dose of limewater, one or two fluid ounces in milk once or twice a day.

Calen'dula, Marigold. Used as a local application to

cancerous and other ulcers and sores. The tincture of the flowers is used, and also an ointment (calenduline).

Calen'duline, A mixture of calendula and cosmoline.

Calisa'ya, The most valuable of cinchona barks. It is Yellow Cinchona.

Calisthenics, Exercises intended to develop strength and beauty, as all judicious exercise does.

Cal'lus, Induration and thickening of the skin; also a deposite of bone necessary to unite a fracture.

Cal'omel, Chloride of mercury (mercurous chloride). Formerly used in a great variety of affections. One professor remarked to his class, "Armed with calomel and the lancet I am prepared to combat all diseases." Both calomel and the lancet have now largely gone out of use. Given in connection with common salt, calomel may be converted in the stomach into corrosive sublimate [mercuric chloride], and hydrochloric acid, which are corrosive poisons.

Calum'bo, or Columbo, A simple vegetable bitter.

Camphor, A colorless [when pure] solid, volatile and odorous substance produced by a tree in Asia. It is antiseptic, diaphoretic, anaphrodisiac. Raspail ["l" silent] of France made great use of it. His "Eau Sedatif" [Sedative water] contains aqua ammonia two ounces, common salt two ounces, spirits of camphor three drams, and water one quart. Used only externally. Raspail was a medical reformer and a martyr to medical progress in France. Camphor is only sparingly soluble in water, one ounce in seven gallons. Camphor water is the best form for internal administration. Dose of camphor water, a dessert spoonful every two hours in Scarlatina, Erysipelas, Smallpox, Diphtheria and all zymotic forms of disease till the fever abates except in sleep. To make it more strongly antiseptic, 5 or 10 grains of boric acid may be added to each ounce of camphor water.

The ordinary dose of camphor is 1 or 2 grains in mucilage.

To powder camphor triturate in a mortar with alcohol enough to moisten or wet the camphor and rub till dry.

A fine camphor emulsion is made by triturating together 1.5 grains of powdered camphor, 7.5 grains of powdered gum arabic [acacia], and one ounce of almond emulsion gradually added. "Spirit of camphor" contains 1 part camphor to seven parts alcohol, and two parts water.

Cancer, Carcinoma. A malignant tumor or sore.

Can'nabis, Indian hemp. Also an American hemp. The Indian Hemp, or Cannabis Indica, is also called Hashish. It is a powerful narcotic and intoxicant.

Can'ula, A small tube sometimes used with a trocar to drain the abdominal and other cavities of serum by tapping.

Canthar'ides, Spanish flies formerly much used for blistering.

Caout'chouc, (The a and t are silent). Elastic gum or India rubber.

Cap'illary, A minute vessel connecting the terminal ramifications of the arteries with the veins.

Cap'sicum, Cayenne Pepper. The tincture of cayenne to be clear must be purely alcoholic.

Cap'sule, A natural covering or sack that encloses some part or organ of the body; also a covering for some medicinal substances.

Carbohydrates, Compounds of carbon and water, or elements of water.

Carbolic Acid, Phenol, or Phenic acid. This is not an acid at all but a kind of alcohol. It is a product of coal tar, a violent poison, and a local anæsthetic. Much used recently in operating rooms of hospitals.

Caldarium, A place or room for giving hot air baths. Written also Calidarium.

Calculus, A chalky or calcareous concretion sometimes found in the bladder or kidneys. It is generally the result of fermentation and use of hard water and baking powders.

Car'bon, One of the four essential elements, always found in organic forms. It occurs in the form of charcoal, diamond, soot and black lead. It is exhaled from the lungs in the form of carbon dioxide, or carbonic acid gas.

Car'buncle, A large complex boil.

Carcino'ma, A malignant tumor. Cancer.

Car'damom, An aromatic carminative, often added to medicine for its flavor and to prevent griping. Malabar cardamom seeds are the finest.

Cardial'gia, Pain in the region of the heart.

Ca'ries, Ulceration of the bone. Occurring in the bodies of the vertebrae it forms Pott's disease.

Carmin'ative, Any warming, calming and soothing medicine that expels flatus from the bowels. It is generally aromatic.

Car'pus, The wrist. It contains eight bones.

Casca'ra Sagra'da, The California Buckthorn. It is a good laxative but should not be used as a purgative. With aromatics it forms the "Cascara Cordial" of Parke, Davis & Co. Used for constipation.

Cascaril'la, An aromatic bitter.

Ca'sein, An albuminous substance found in milk, cheese, peas, beans, etc. That found in peas and beans is generally called legumin.

Castra'tion, Removal of the testicles.

Cat'alepsy, A kind of trance, or state of unconsciousness, without other symptoms of disease.

Catame'nia, The menses.

Cataphoresis, The transfer of medicaments by use of the electric or galvanic current.

Cat'aract, Opacity of the crystaline lens.

Catarrh', Abnormal discharge from the mucous membrane. It may affect the respiratory, alimentary or urinary passages; any part lined with mucous membranes.

Carthar'sis, Purgation by use of drugs.

Cath'eter, An instrument for evacuating the bladder.

Caus'tic, A substance that burns and destroys living tissues.

Cau'tery, The use of the hot iron, galvanic current or other substance which is sufficient to destroy or disorganize morbid growths, excrescences, tumors, etc.

Celluli'tis, A diffuse inflammation of cellular tissue.

Cel'luloid, A substance made from gun cotton and camphor. Used by dentists, surgeons, and others in various ways. It somewhat resembles ivory in structure.

Cel'lulose, or celluline, is an indigestible substance which composes the cells of wood, and the cellular tissues of plants. It is not suitable for food, being quite indigestible. The hull of the wheat kernel and the skins of fruit is largely cellulose. It has the chemical composition of starch.

Centigrade, The 100 step plan or kind. The C. Thermometer has 100 degrees between the freezing and boiling points, while Fahrenheit's Thermometer has 180 degrees between the same two points viz. 32, to 212 degrees.

Cen'tigramme, The hundredth of a gramme. 0.15 of a grain.

Cen'timeter, The hundredth of a meter; about 2-5 of an inch.

Cer'ebro-Spinal, Pertaining to the brain and spinal cord.

Cer'ebrum, The upper brain. It forms the two cerebral hemispheres, with all their convolutions and lobes.

Ceru'men, Wax of the ear. Probably offensive to insects. May be kept from accumulating by proper washing of the ear.

Cer'vix, The neck.

Chan'cre , A syphilitic ulcer or sore, usually on the genital organs. Apply tincture of bloodroot.

Char'bon, Anthrax, or malignant pustule. Splenic Fever.

Char'pie, Linen shreds for dressing wounds.

Chem'istry, The science of molecular life, and based at present on the atomic theory.

Chenopod'ium, American Wormseed.

Cheyne-Stokes Respiration, A kind of dyspnœ'a. The respirations gradually increase in frequency, then gradually decrease to temporary cessation.

Chicken-pox, Varicella. A very mild form of small pox.

Chimaph'ila, Prince's Pine. Pipsissewa. One kind of wintergreen. Alterative, diuretic and tonic. It is a mild and safe medicine for the blood.

Chirop'odist, One who treats the hand or foot.

Chlo'ral, Chloral Hydrate. A powerful hypnotic, but not anodyne except in dangerously large doses. It is a narcotic poison, and dangerous even in 7 grain doses. The dose as given in the books is 5 to 30 grains, but 10 grains have proved fatal. It has been given extensively in Allopathic Practice in cases of insomnia, tetanus, delirium tremens, seasickness, convulsions. etc.

Chlo'rine, A greenish yellow poisonous gas, and one of the elements of common salt. Is is used for bleaching and disinfecting purposes. It cannot be safely respired. Chlorine water contains 4 per cent of gas. Labarraque's Solution contains carbonate of sodium 10, chlorinated lime 8, and water 82 parts. This solution is used as a disinfectant wash for foul sores, sinks, water closets, sick rooms etc.

Chlo'rodyne, A proprietary remedy composed of several of the most powerful narcotics, and used for subduing pain. The more rational method of subduing pain is to remove its cause.

Chlo'roform, A heavy colorless liquid obtained by the action of chlorinated lime on alcohol. Properly administered WITH A PLENTIFUL SUPPLY OF AIR it is one of the most valuable of general anæsthetics, although in New England ether is generally preferred for surgical operations on account of being less dangerous. Spirits of chloroform (nine parts alcohol), is generally used for inhalation, unless it be the A. C. E. mixture (alcohol 1 part, chloroform 2 parts, ether 3 parts). It is better not to give anæsthetics immediately after a hearty meal. The circulation should be free and the lungs relieved from any undue pressure. The recum-

bent or semi-recumbent position of the patient is best, and in case of danger cease to administer and raise the feet higher than the head to aid the return of blood to the brain, and if necessary, resort to artificial respiration. Stertorous breathing indicates that the effect of the chloroform has reached the respiratory center and is dangerous if continued. Dilatation of the pupil is also a symptom of great danger. A moderate dose of whiskey or morphine previously taken promotes the effect of the chloroform. Drunkards and consumptives are dangerous subjects for anæsthetics. In administering an anæsthetic commence gradually by allowing the patient to inhale freely of air. This allows the lungs to empty themselves of residual air and prevents coughing and struggling. Mixed with four times its volume of sweet oil, or oil of sweet almonds, and emulsified with gum arabic, chloroform is sometimes given internally as a sedative. Dose, 2 to 5 drops.

In overdoses, chloroform produces violent inflammation of the stomach, stupor, and death. It is therefore poisonous. Externally it is used in liniments for rheumatism, and neuralgia. Chloroform liniment contains four parts chloroform and six parts soap liniment. The latter contains soap, camphor, oil of rosemary, alcohol and water, in the proportion of 10, 5, 1, 83½ and 14 parts, respectively. The soap in thin shavings, is dissolved in the water; the camphor and oil in the alcohol, and the two solutions are then mixed and filtered. Chloroform water (sometimes given in dram doses to relieve colic), contains three grains of purified chloroform dissolved in one ounce of pure water.

Neither ether nor chloroform is quite safe to use by aid of any artificial light, as one is inflammable, and the other gives rise to fumes which are noxious and irritating.

Chloroform will dissolve and remove paint from clothing. It is a powerful solvent.

Chloro'sis, The "green sickness." An affection peculiar to young women. It is characterized by a sallow complexion, anæmia, torpor of all the functions and usually suppressed menstruation. A proper regimen, as to food, air and exercise, with a rational philosophy of life to give bouyancy of spirit, is the proper cure of this and many other complaints.

Chol'agogue, A bile expeller or liver medicine. Calomel or Blue pill once stood at the head of the list. Dilute Aqua Regia is very efficient. Podophyllin, washed sulphur, Euonymin, and Leptandrin, are used as cholagogues.

The new cholagogue is understanding how to live. Drop temporarily from the diet, all fat and greasy food, pie crust and pastry; drink only water or lemonade and regulate the bowels by proper attention, and if necessary, wash out the colon; knead the liver and bowels to induce healthy action, and work with your might, but reasonably, for the good of all mankind. The new treatment will both cure and lengthen life; while drugs will shorten life and often fail to cure, even temporarily.

Chol'era, A name given to disease when characterized by vomiting and purging, cramp in the legs or arms, and sometimes abdominal pain and collapse. The word is derived from the Greeks and signifies the gutter of a house that carries off the rain. The disease is most common in hot climates, or in hot weather when fermentation and decomposition most readily occur. It has been ascribed by Koch and his followers to the comma bacillus, and by others to fear. The most malignant form is known as Asiatic cholera. Its malignancy is no doubt largely due to medical treatment—bleeding, calomel and opiates.

Cholera Infantum is the "summer complaint" of children due to mismanagement in feeding.

Cholera Morbus is applied to this complaint when accompanied by severe abdominal pain.

Cholera syrups usually contain opium or laudanum, camphor, rhubarb, cayenne and peppermint. The best treatment is with camphor, boric acid and the fountain syringe to cleanse the large bowel. May give a spoonful of camphor water clear, or two drops of spirits of camphor on a small lump of sugar every five minutes till the severe symptoms abate. The application of cloths wet in spirits of camphor to the pit of the stomach is useful.

Chrondro'ma, A cartilaginous tumor.

Cho'part's Operation, Amputation of the foot at the ankle leaving only the astragalus and heel bone.

Chor'da, Latin for cord. We have in Anatomy the Chorda spinalis or spinal cord, the Chordæ Tendinæ, or heart-strings, the Chorda Tympani, a sympathetic nerve that passes through the tympanum, and the Chorda Vocalis, one of the vocal cords.

Chore'a, St. Vitus' Dance. A neurosis, or nervous disorder, usually occurring in young persons and characterized by involuntary and spasmodic contractions of the muscles which produce involuntary motions of the limbs, trunk or face. It is generally connected with disordered digestion

which clogs the circulation and interferes with the perfect control of the nerves.

Chordee', Painful erection of the penis, probably caused, or at least aggravated, by remedies used in treating Gonorrhœa (Urethritis).

Cho'rion, The middle one of the three membranes enveloping the fœtus, internal to the membrana decidua which lines the womb, and external to the amnion that surrounds and incloses the "liquor amnii."

Cho'roid, Resembling the chorion (skin) because vascular, or full of blood vessels. It is the second covering of the eyeball, and lies between the sclerotic coat and the retina, being continuous in front with the iris.

Chron'ic, Of long standing, applied to disease in distinction from acute disease.

Chrys'alis, The third mode of existence (if we reckon the egg as the first) of the insect. The larva (caterpillar or grub state) is the second stage and the pupa, or chrysalis, the third. The chrysalis is sometimes of a golden color from which it takes its name. It corresponds, if we live at all beyond the physical, to the human body as it lies apparently dead, while yet the soul inhabits it. It may be minutes, it may be hours, or it may be days that we live in the chrysalis condition.

Chrysaro'bin, Improperly called chrysophanic acid. A substance derived primarily from a Brazilian tree in the form of Goa powder. It is used as an ointment—10 per cent of the drug and 90 per cent of benzoated lard or vaseline as an application to ringworm and in Psoriasis. It is an irritant, and should be used with caution about the face. It stains the skin and clothing a yellow color. The stains may be removed with a weak solution of chlorinated lime.

Chyle, A substance found in the lacteal vessels resembling both lymph and serum in its nature, but of a milky color owing to the emulsion of fat which it contains. The chyle passes through the lacteals, mesenteric glands, and thoracic duct to the left subclavian vein where it enters the venous circulation.

Chyme, The ingesta of the stomach and small intestine. It is composed of food mixed with the various digestive solvents secreted by the salivary glands, stomach, liver and pancreas.

Cic'atrix, A scar. The mark left by the healing of a wound or sore.

Cil'ia, The eyelashes. Also microscopic hair like appen-

dages of cells and mucous membranes that act like a brush or fan to propel particles of matter or fluids along the passages that they line. Their rapid motion has been observed only in the direction of the outlet of canals.

Cimicif'uga, Black Cohosh. Black Snakeroot. It resembles digitalis in its nature but is less powerful. By some considered valuable as a remedy in rheumatism. Its resinous extract is called Mac'rotin. Dose of the fluid extract, 5 to 20 minims. Of the Macrotin ½ grain.

Cincho'na, Peruvian Bark. Has been very largely used in medicine as a tonic and antiperiodic. (See Quinine).

Cirrho'sis, A morbid condition implying yellow coloring matter. It is most frequently used in connection with the liver. It is the hobnailed, atrophied liver of the drunkard combined with jaundice.

Cit'rine Ointment, A mercurial ointment named from its lemon yellow color.

Clap, A popular designation for urethritis of syphilitic origin.

Climac'teric, The age of woman when menstruation ceases.

Clin'ic, Relating to a bed. Bedside instruction. Usually given in the operating room of hospitals.

Clon'ic, Violent convulsions. Involuntary convulsive motions with alternate relaxation. Spasms. Used in contradistinction to tonic convulsion which constitutes tetanus.

Clys'ter, An enema or injection. A lavement of the colon or large intestine, by means of a syringe.

Coag'ulum, A clot. A clot of blood consists of fibrin and blood corpuscles. After the blood clots we have as the result only coagulum and serum. It usually clots in the body in ten to twenty hours after death, but drawn from the body it clots in a few minutes.

Co'ca, Coca and cocaine are derived from a shrub of South America. It is a very different thing from Cocoa or chocolate, and must never be confounded with the latter.

Cocaine is a poisonous alkaloid from Coca (Erythroxylon), and has been of late considerably used both as a local anæsthetic and stimulant, but its use is attended with danger. Cases are recorded in which cocaine has caused permanent opacity of the cornea when used as an anæsthetic. The habitual use of it as a stimulant leads to loss of moral and intellectual power, emaciation and death. Blindness, loss of speech, vomiting, syncope and unconsciousness have followed its use either internally or locally.

Coch'lea, A part of the internal ear, resembling a snail shell. It contains the organ of Corti, and a portion of the auditory nerve. Its canal is not much larger than the wire of an ordinary brass pin, but small as it is, it is divided into three compartments called sca'lae (ladders), the scala tympani, scala media and scala vestibuli.

Co'coa, The fruit of a species of palm tree. The Theobroma cocoa tree furnishes the chocolate nut. Much used as an article of diet.

Cohabita'tion, The living together of man and woman without legal marriage.

Cohosh, There are four botanic remedies of this name. The black cohosh (Cimicifuga) or black snakeroot is mentioned elsewhere. It is a tall stately plant from four to eight feet in height.

The blue cohosh (Caulophyllum) is also known as squaw root. It is said to be diaphoretic, anti-spasmodic and parturient. The other two, white and red cohosh, are varieties of a native species of Actæa which is known as "Baneberry" from the reputed poisonous properties of their berries.

Co'itus, Copulation. Act of sexual commerce.

Col'chicum, (ch like k), Meadow saffron. Has been by some much used in gout and rheumatism. It is classed in the books as a cholagogue, alterative, and diuretic, but is a drastic cathartic, and irritant poison.

Col'ic, Pertaining to the colon. Belly-ache.

Col'ica Pictonum, Painters' colic, caused by lead poisoning. Care should be used by painters in lead to avoid getting the paint into the mouth. The symptoms of chronic lead-poisoning are constipation and severe spasmodic colic, foul breath, a blue line along the ridge of the gums, and occasionally paralysis of the muscles of the forearm called "wrist-drop."

In acute lead poisoning there is a burning at the stomach, vomiting, and if not relieved, collapse and death. In acute cases give an emetic, and follow that by a laxative of magnesium sulphate, or Epsom Salts. ½ oz. of the latter may be given at a dose, or even an ounce. It forms with the lead a comparatively insoluble sulphate of lead which PREVENTS ABSORPTION of the poison. In chronic lead poisoning magnesium sulphate may also be given as a laxative.

To eliminate the lead from the system let the patient take a daily bath of sulphide of potassium—two or three ounces in a tubful of warm water—and continue until the baths cease to cause discoloration of the skin.

Iodide of potassium, 5 grain doses twice a day, will help, it is said, to eliminate lead or mercury from the system, by dissolving the lead in the system to some extent.

Collapse′, Extreme prostration from failure or exhaustion of the nervous force, often followed by death. A complete prostration of strength.

Collinso′nia, Stone-root. A popular panacea, or cure all, in the Southern States. It is a stimulant having a special effect upon the mucous membrane of the lungs and bladder.

Collo′dion, A preparation of gun-cotton, ether and alcohol. It is very inflammable and must be kept away from any flame. It forms an elastic film over the surface to which it is applied, and serves to protect wounds and abrasions from the air; to hold contiguous edges of wounds together; is useful to apply to fissure of the nipple; to abort boils; and to reduce hæmato′ma, or bloody tumor. The film contracts in drying and mechanically presses the blood from the tumor (if recent or fresh, as from any injury that cuts off or severs some of the small vessels that enter the bone) back into the circulation. In this way a blood tumor may be completely reduced in a few hours, or even minutes.

Flexible collodion contains Canada turpentine and castor oil which moderate the contractile power. Pure collodion is sometimes painful, especially if the film is thick, on account of the forcible contraction.

Collyr′ium, Eye water, or eye salve.

Col′ocynth, Bitter apple from Spain or Turkey. A very bitter, drastic, and poisonous hydragogue cathartic. It has been in the past much used in cases of dropsy and rheumatism. Combined with calomel, jalap and gamboge it forms the "Compound cathartic pill" very often prescribed in regular or Allopathic practice. The latter is a mercurial pill because it contains calomel, which is the chloride of mercury.

Cologne′, Perfumed spirit. It consists of alcohol 800 parts, oil of bergamot 16, oil of lavender and orange flowers (neroli) of each 4 parts, acetic ether 2 parts, and lastly water 158 parts. Let stand for one week and filter. It takes its name from the place where first made. Used as a perfume.

Colos′trum, The first milk drawn from the breast after the birth of a child. It is more laxative than the ordinary secretion and assists in expelling the meconium, or fæcal matter of the infant.

Colpi′tis, Inflamation of the vagina.

Co′ma, An abnormally deep sleep due to compression of the brain. Often accompanied by stertorous breathing.

Compound Cathartic Pills, See Colocynth.

Com'press, A folded cloth or rag first used to make compression upon a part; now a folded cloth wetted and applied to foment some diseased part.

Concep'tion, The impregnation of the ovum by contact of the male semen, or by a spermatozoon.

Concussion of the brain, A stunning, or shock, which produces stupefaction, or entire unconsciousness, and some times vomiting.

Con'diment, Sauce, or anything used to improve the flavor of food, or to excite appetite. Salt, pepper, mustard, spices, horse-radish, &c., are used as condiments.

Condom, A sheath sometimes worn over the penis during copulation.

Confec'tion, Something made up with sugar or honey.

Confine'ment, The restraint of liberty attending childbirth.

Congen'ital, Existing from birth, or dating back to one's birth. Born with the person.

Conges'tion, Undue fulness of the blood vessels of some part or organ. A crowding of the part with blood.

Co'nium, Poison Hemlock. Cicuta. It is the poison that Socrates was condemned to drink. It is called in the books a spinal and pulmonary sedative. It paralyzes the motor centers. It is much employed in the old practice in acute mania, or insanity, chorea, asthma, and whooping cough, and by inhalation, for bronchial affections and consumption. Its various preparations are all of uncertain strength.

Conjunc'tiva, The mucous membrane of the eye; so called because it joins the lid to the eyeball. It lines the lids and covers the anterior portion of the eyeball.

Conjunctivi'tis, Inflammation of the conjunctiva.

Constipa'tion, A binding or stuffing of the bowels. See costiveness.

Constitu'tional, Relating to the entire physical organism as a whole.

Contu'sion, A bruise.

Convalla'ria, Lily of the valley. Used sometimes as a substitute for digitalis as a heart corrector; also in poisoning from opium; in intermittent fever; epilepsy; and as a vermifuge. It is cathartic and diuretic. Dose of the fluid extract 30 to 60 minims.

Convales'cence, Gradual return to health.

Convul'sions, Fits. Eclampsia. Often caused by disordered digestion and worms.

Copula'tion, The act of sexual connection.

Coral Root, Crawley root. Highly esteemed by Eclectics as a prompt and powerful diaphoretic to be used in fevers, cramps, and night sweats. Dose of the powdered root 20 to 30 grains.

Cor'dial, From the heart. Reviving. Restorative. An aromatic stimulant.

Beach's Neutralizing Cordial consists of Rhubarb, Peppermint leaves, and bicarbonate of soda, equal parts, all in powder. To a large teaspoonful of the powder add half a pint of boiling water; when cool, strain, sweeten with sugar, and add a table spoonful of best brandy. Dose one or two spoonfuls every half hour in cholera morbus, diarrhœa, or dysentery. An excellent preparation. The soda neutralizes the acidity of the stomach, the rhubarb acts as a laxative, and the brandy is antiseptic.

Cor'oner, An officer whose duty it is to inquire by jury, or otherwise into the cause of any violent or sudden death.

Cor'pora, Plural of corpus, which signifies body.

Cor'puscle, A little body. A name given to an almost innumerable number of microscopic bodies found in the blood. Applied also to minute bodies found in the spleen, kidneys, and nervous system.

The corpuscles of the blood are of two kinds, white and red. The red are most numerous. They are biconcave, flattened discs in man, resembling a collapsed hollow rubber ball. In other animals they are oval or globular; and, if the human corpuscles are put into fresh water they absorb more water and become globular. The corpuscles make up about one-eighth, or 127 parts in 1000, of the entire blood. In size they are about .0003 (three-ten-thousandth's) of an inch in diameter; microscopic.

Cor'pus lu'teum, The spot, or scar, left upon the ovary after the escape of the ovum. The peculiar appearance of these spots was once erroneously considered diagnostic of pregnancy.

Cor'rugator, That which wrinkles.

Cor'tex, The bark. The external part of the brain, or kidney.

Cory'za, Catarrh of the head.

Cosmet'ic, Something applied to remove freckles, or pimples, and beautify the skin.

Cos'moline, Petroleum ointment. Vaselin. It does not turn rancid, and is used as a simple ointment in place of lard.

Cos'tal, Pertaining to the ribs, (costæ).

Cos'tiveness, Constipation. Binding of the bowels. It is cured permanently only by the use of proper food and drink, with healthful and cheerful exercise.

Cow'pox, Vaccina. Small pox of the cow usually induced by inoculation with small pox virus.

Coxal'gia, Hip pain. Disease of the hip joint.

Cramp, A spasmodic and involuntary contraction of the muscles.

Cra'nium, The brain case. The skull.

Crawley, Coral root.

Crema'tion, Incineration of the dead body.

Cre'olin, A coal tar deodorizer. Used in the lying-in chamber as a wash for the hands and for vaginal irrigation in a 1 to 2 per cent solution. It is a black fluid and forms an emulsion with water. Said to be non-poisonous.

Creation, The production of visible forms out of invisible substance. The aggregate of created things; the universe. Also investing with a new character.

Crepita'tion, A crackling noise produced by the grating of fractured bones, by air moving in the areolar tissue, or by respiration in pneumonia,

Cri'sis, The turning point in disease.

Cro'ton oil, Oleum Tiglii. A powerful drastic cathartic, and an irritant to the skin.

Croup, A spasmodic, or diptheritic affection of the trachea and larynx, characterized by difficulty of breathing, a stridulous cough, or crowing sound, and in some cases by the developement in two or three days of a membranous deposit upon the mucous membrane. Due to improper feeding, wet and cold feet and hands, worms in the stomach, the wearing of damp clothing, and the breathing of impure air. The attacks usually occur in the night. Give the patient a liberal drink of hot water or lemonade. Rub the hands and feet, if cold, till they are warm; and, if necessary to relieve the spasm, apply to the throat and neck a hot wet compress for 10 or 15 minutes, then remove and rub dry. Nothing more will be needed if suitable care is taken of the child. The old fashioned emetic, sulphate of zinc in 10 to 30 grain doses, was a dangerous remedy, and failing to be promptly rejected, poisoned the child.

Cryptoga'mia, Plants having no visible seeds or means of fructification, such as mosses, fungi, lichens, &c.

Crystalline Lens, The lens of the eye, situated behind the iris and between the aqueous humor and the vitreous body, called also the vitreous humor. Opacity of this lens is

called a "cataract".

Cube'ba, Cubeb. An aromatic stimulant, or irritant, with special direction to the mucous membrane. Used in urethritis, and catarrh.

Cul de sac, Bottom of a bag, or sac. The cæcum. A cavity closed at one end. The cul-de-sac of Douglas is a pouch between the uterus and rectum.

Culver's root, Black root. Leptandra. A cholagogue much used by Eclectics. The fresh root is acrid, producing em'esis, bloody stools, and vertigo.

Cupping, The application of cupping glasses for counter irritation, or abstraction of blood.

Cura're, Woura'ra. Used in South America as an arrow poison; and in physiological experiments on animals. It paralyzes the motor nerves and voluntary muscles. It is given hypodermically. Is extremely poisonous.

Curette', A sort of scoop used in surgery.

Cu'ticle, The scarf skin. Epidermis.

Cu'tis, The true skin, or derma.

Cyano'sis, A bluish discoloration of the skin from excess of carbon in the blood. Want of oxidation.

Cynan'che, A choking. Applied to sore throat, mumps, croup, diptheria, and tonsilitis.

Cypripe'dium, Lady's Slipper. Moccasin Flower. American Valerian. Nerve root. It is antispasmodic, and diaphoretic. Used in hysteria, chorea, epilepsy, and in fevers. Dose of fluid extract 10 to 30 minims. It is a mild nervine.

Cyst, A pouch or bladder. The urinary bladder is a cyst; so is the gall bladder; but the term is often used to designate an abnormal pouch or sac that has no opening and is filled with some liquid, or with some albuminous, fatty, or caseous substance.

Cystic, Usually referring to the urinary, or gall bladder.

Cysticer'cus, The immature form of the Tapeworm (Tænia).

Cysti'tis, Inflammation of the bladder.

Cystot'omy, Incision of the bladder for the rəmoval of calculus. Lithotomy.

Cytol'ogy, Cell study.

D

Decid'ua, Something that falls off. Applied to the outer membrane that envelopes the ovum and fœtus during gestation, and falls off at birth with the placenta. It forms a temporary lining for the uterus.

Decoc'tion, A tea made by boiling.

Decus'sate, To cross like the letter X at acute angles. Applied to fibers of nerves and muscles.

Defeca'tion, The discharge of fæces. Evacuation.

Defibriniza'tion, The removal of fibrin from the blood or lymph.

Degenera'tion, Taking on an inferior condition, as when the substance of an organ changes to fat, and thus becomes incapable of performing its office.

Degluti'tion, Swallowing.

Degree, A step. A distinction usually given or conferred by some corporate body as evidence of having taken one or more steps in advance, as applied to science, or some profession.

Dejec'tion. Thrown or cast down. Applied to despondency of mind; and also to the discharge from the lower bowel.

Delivery, Childbirth.

Demen'tia, A mild form of insanity bordering on idiocy. Loss of understanding.

Demul'cent, A substance that soothes or protects the mucous membrane or surface to which it is applied. Slippery elm, flaxseed, gum Arabic, marsh mallow, oil of sweet almonds, pure or distilled glycerine, liquorice, cosmoline, lanolin, suet, and cacoa butter, are examples.

Den'gue, A variety of rheumatic fever which appeared in 1827 in the West Indies and Southern States.

Dent'ifrice, A substance used for cleaning teeth. A tooth powder.

Denti'tion, Teething. The middle incisors of the lower jaw usually appear from the 6th to the 8th month, followed by the upper middle incisors; then the lateral incisors in the same order one or two months later; next the first, or anterior, molars at the end of the first year; three or four months later, the canines or eye teeth; and lastly, the second molars at two or two and a half years. These are primary, deciduous,

or milk teeth, 20 in number, that begin to fall out about the 7th year. The permanent teeth, 32 in number, appear in somewhat different order, but still the lower precede those of the upper by a few weeks. The first molars appear the 7th year, and each year, for the next six years, we have one of the following in the order given: central incisors, lateral incisors, first bicuspids, second bicuspids, canines, second molars. The third molars do not appear till six or seven years later, and sometimes more. The latter are called "wisdom teeth." Dentition is not properly a cause of any disease as it is a natural process.

Deob'struent, A medicine supposed to remove obstructions.

Dermatol'ogy, Study of the skin.

Desicca'tion, Drying.

Desquama'tion, Scaling off the cuticle or other parts. Pityriasis. Formation of dandruff.

Deter'gent, Cleansing. A cleansing substance, or antiseptic.

Detri'tion, Wearing down, or wearing away.

Diabe'tes, Passing an abnormal quantity of urine. It is accompanied with excessive thirst and progressive emaciation. It is probably, as a general thing, the result of using excessively salt and salted provisions, sugar and starch, or by an error of diet. In diabetes mellitus, a large quantity of sugar is found in the urine. There are many tests for sugar, but among the simplest are the following: Moore's test—Boil with caustic potassa; if sugar is present the liquid will become first light yellow, and afterward brown.

Fermentation Test: Add to the fluid to be tested, a small quantity of yeast, and leave in a warm place for a day. If sugar is present fermentation takes place with an escape of CO_2 (carbonic acid gas).

Diagno'sis, Using the necessary means for ascertaining the nature of the disease. Disease is usually judged by its symptoms.

Dial'ysis, Dissolution. The separating by means of a diaphragm (divider) of a soluble from an insoluble substance, or a crystalline substance from a colloid. Substances that will not dialyse cannot be taken into the circulation, or used as food. They all have to pass through animal membranes. Woody fiber (cellulose) will not dialyse.

Diaphoretic, A medicine that induces perspiration.

Diarrhœa, A watery and frequent discharge from the bowels.

Dias'tole, The expansion or dilatation of the heart.

Diath'esis, Disposition, condition, or constitution of body tending to some particular form of disease, like scrofula, gout, or calculus of the bladder. The latter is called the lithic, or uric acid diathesis.

Diet, Food; victuals. To feed, or eat, by rule.

Diet'ic, or dietetic, Pertaining to diet.

Differentia'tion, The act of transforming a homeogeneous material into many different tissues.

Diges'tion, Distribution of food from the stomach and alimentary canal, by means of the lymphatics and blood vessels, to all parts of the body.

Dig'it, A finger or toe.

Digital'is, Foxglove. A vegetable poison much used in ordinary practice for heart disease, and some other difficulties. It reduces the rate of pulsations or number of heart beats, and if continued, sooner or later, depending upon the amount taken, stops them altogether. It tends to paralyze both sensory and motor nerves. Its effect is cumulative, so that its real injury is for a time masked.

Dila'tor, An instrument for enlarging a cavity or opening. Barne's dilator is an instrument for dilating rapidly the entrance to the uterus. It is a bag that is first inserted, then distended by the use of water. All forcible dilatation is more or less dangerous.

Dil'uent, A medicine that thins or weakens the fluids and secretions of the body. Water.

Diosco'rea, Colic root. Wild Yam. It is considered antispasmodic, expectorant, and diaphoretic. It is given in bilious colic, coughs, after-pains, and dysmenorrhea (painful menstruation).

Dioscorea, with High Cranberry Bark (Viburnum), Scullcap, and aromatics make up a well-known Viburnum Compound.

Diphthe'ria, A disease characterizedby the formation of false membrane.

Dipsoma'nia, Madness for drink. Uncontrollable desire for spirituous liquors.

Discu'tient, A medicine supposed to resolve, repel, or discuss tumors.

Disease, Discomfort, pain, or distress of mind in consequence of some actual or impending derangement or injury of the body or physical organism.

Disinfect'ant, A substance that destroys morbific effluvia, and prevents infection. A purifier. An antiseptic.

Chloride of lime, and hydrogen per oxide are much used. Ozone and atmospheric air are the safest and best disinfectants.

Dislocation, A displacement of some bone, or organ.

Dispen'sary, A charitable institution by which the poor are supplied with medicines. Also a shop for dispensing drugs.

Dispen'satory, The apothecary's hand book. It describes the history, composition and preparation of medicines. The three most in use in this country are the United States, King's, and the National Dispensatory.

Dissection, The cutting apart or dividing of organic bodies for the purpose of more minute inspection, or removal.

Distal, Farthest from the trunk, heart, or median line of the body.

Distilla'tion, The double process of converting into vapor and then condensing the vapor to a liquid again, for the purpose of purifying liquids.

Diuret'ic, A medicine given to increase the flow of urine.

Doctor, Properly a teacher; but a medical doctor is a practitioner of medicine. Also a title conferred by an incorporated institution of learning.

Dogma, An opinion, tenet, or statement of one claiming, or holding authority. An established doctrine.

Dolor, plural dolores, Anguish; suffering; pain.

Don'ne's test for pus in the urine, Let the urine stand till the cloudy matter settles, then decant; stir the residue with a piece of potassium hydrate which converts pus into a thick gelatinous mass, but does not thicken mucus.

Dor'sum, The back.

Douche, A stream of water let fall upon the body, or directed against some part.

Dover's Powder, Formerly composed of Opium 1, Ipecac 1, and sulphate of potash 8 parts: lately the sulphate of potash has been replaced by sugar of milk. Dose for an adult 5 to 10 grains. The Dover's Powder may be further improved for use in fevers by adding of powdered camphor 2 parts. The camphor makes it antiseptic and more diaphoretic. An opiate should not be given in full dose more frequently than once in four hours, but it is better to divide the dose and the interval for taking also if necessary.

Dras'tic, Powerfully purgative.

Drop'sy, An unnatural collection of fluid, or serous effusion in some cavity, or other part of the body. It arises from

obstructions in the lymphatic vessels, or from a stagnant or sluggish condition of the blood. (See Asclepias).

Drug, A commodity more or less noxious, or unsalable

Duc'tus, Latin word for duct, or canal.

Dyn'amo, A machine which is driven by steam or other power and furnishes electricity.

Dyscra'sia, Bad habit of body. Bad blood.

Dys'entery, Disease of the bowels characterized by griping pain, bloody stools, and tenesmus. It is said to be located in the colon and rectum.

Dysmenorrhœ'a, Difficult (painful) menstruation.

Dyspep'sia, Bad digestion; owing to error of diet, or some disturbance of the mind.

Dyspha'gia, Difficulty of swallowing or eating.

Dyspnœ'a, Difficulty of breathing.

Dysto'cia, Difficulty of child birth.

Dysu'ria, Difficulty of voiding urine.

E

Ecbol'ic, An expeller. An agent given to expel the ovum, or produce abortion; or one supposed to act in that way.

Ecchymo'sis, Extravasation of the blood into the areolar tissue, producing a "black and blue spot".

Eclamp'sia, Convulsions. They may be puerperal, epileptic, or uræmic. Puerperal convulsions are due to plethora, excess of albuminoids in the blood, and clots or clotting of the blood.

Ecraseur', An Instrument for amputating some part, like a hemorrhoidal tumor, by tightening a small chain or wire loop so as to slowly crush the parts asunder and at the same time prevent bleeding.

Ec'stacy, A trance, or exalted state of mind with apparent insensibiliy of the body, or outward senses.

Ecze'ma, Moist or running tetter (foul sores),or inflammation of the skin. It is often caused by the use of mercury, and salt, or salted provisions, but may also be caused by quinine, or arsenic. There is an eruption of vesicles that burst and pour forth an acrid discharge. Use oatmeal water for washing and no soap. Soap leaves the skin to dry. Iodide

of sulphur ointment is used to allay itching.

Ed'ible, Eatable. Good for food.

Ef'ferent, Bearing outwards. A centrifugal or motor nerve, in contradistinction to an afferent or sensory nerve.

Effu'sion, A pouring out, or an abnormal secretion of serum into some serous cavity.

Eges'ta, Discharges from the bowels.

Elas'tin, The fundamental element of elastic tissue.

Elate'rin, A violent purgative extracted from Elaterium (squirting cucumber). It consists of small shining crystals, intensely bitter and acrid. It is also called elateri'num, and must not be confounded with elate'rium as it is much stronger. Clutterbuck's elaterium is considered the best. It is only used to produce watery discharges from the bowels in abdominal dropsy. Dose of the elaterium one-eighth of a grain. Dose of the elaterin, or elateri'num, one-sixteenth of a grain or less. There is an official "trituration of elaterin" with 9 parts sugar of milk. Of the trituration the dose is ½ of a grain, making one-twentieth of a grain of elaterin.

Electric'ity, One of the links in the chain of being; a powerful force developed by chemical action, or friction, and convertible into heat, light, and motion.

Elec'trode, One of the poles of a battery.

Electrol'ysis, The decomposition of bodies, or the dissolution of compounds by means of an electric or galvanic current.

Electro-magnet, A magnet produced by passing a current of electricity through a coil of wire which winds around a soft iron core and converts the latter into a magnet.

Element, A simple substance that cannot be decomposed. The chemist reckons 67 elements or elemental substances.

Elephanti'asis, Elephant leg. Disease of the skin and subcutaneous tissue which results in enormous hypertrophy.

Elixir, An agreeably flavored liquid preparation, or flavored syrup.

Emacia'tion, Loss of flesh; leanness.

Emascula'tion, Act of making inpotent. Removal of the testicles.

Em'bolism, plugging of a blood vessel by a clot of blood.

Embroca'tion, A fluid application to some injured part.

Em'bryo, The name of the unborn child prior to the period of quickening.

Embryol'ogy, Study of fœtal developement.

Embryotmy, Cutting up of the fœtus, or embryo into fragments to extract it in parts.

Emet'ic, That which produces vomiting. Tincture, or wine of Ipecac, or of Lobelia, or both together serve this purpose well. Sulphate of zinc has sometimes been given but is unsafe, as it is poisonous and may not be rejected.

Before giving an emetic, when time is not too pressing, first see that the hands and feet of the patient are warm, and next that the stomach is alkaline by giving if necessary to neutralize the acid contents of the stomach a little bicarbonate of soda in warm water. These precautions will make the operation much easier for the patient. A teaspoonful of the tincture of Ipecac or Lobelia, or a mixture of both, may be given every ten minutes in a goblet of warm water till emesis is induced.

Emmen'agogue, An agent that stimulates the menstrual flow. An infusion of pennyroyal (Hedeoma) given warm is one of the best.

Emol'lient, An application that softens the skin.

Emphyse'ma, Inflation of some part of the body with air.

Empir'ic, An experimenter; or one who depends upon his own experience in the practice of medicine.

Emprosthot'onos, Tetanus of muscles that bend the body forwards.

Empye'ma, Pus in the plural cavity or thorax.

Emul'sion, Water in which oil, gum, or balsam is held in suspension by means of being rubbed up with some substance, like mucilage or the yolk of eggs. Milk is a natural emulsion.

Emunc'tory, Organs whose office it is to discharge useless and waste matters from the body are emunctories, or eliminating organs.

Enceph'alon (In the head), The entire contents of the normal cranium. The brain or brains.

Enchondro'ma, A cartilaginous tumor.

Encyst'ed, Enclosed in a cyst or capsule.

Endem'ic, Some disease that originates or is engendered among the people, in distinction from an epidemic which is supposed to fall upon or reach the people from without, or beyond the people.

Endocardi'tis, Inflammation of the lining membrane of the pericardium, or heart-case.

En'dogen, A plant that grows from within like a stock of herdsgrass. An exogen grows from without like many trees.

Endometri'tis, Inflammation of the membrane that lines the uterus.

Endosmo'sis, The interchange and passage of liquids through animal membranes.

En'ema, An injection, lavement, or clyster. A liquid thrown into the colon or rectum.

Enerv'ate, To weaken.

Engorge'ment, Filled to distention. Vascular congestion.

Enosto'sis, A bony tumor within a bone.

Enteri'tis, Inflammation of the intestines.

Entozo'on, A parasite living within the body of another animal.

Entro'pium, A turning inwards of the eyelid so that the lashes irritate the globe of the eye.

Enure'sis, Incontinence of urine.

Envi'ronment, The surroundings, or totality of external influences.

Ephem'eral, Living for a day. Shortlived.

Epidemic, Some disease that is supposed to fall upon the people from without. **Many sick at once.**

Epider'mis, The scarf skin, or cuticle.

Epidid'ymis, A portion of the testicle consisting of the complex convolutions of a tube or duct that opens into the vas deferens.

Epigas'trium, The region over or upon the stomach.

Ep'ilepsy, The falling sickness attending a disturbance of the circulation at the base of the brain and involving the cerebrum. The person falls and lies for some minutes in a convulsive stupor. The cause is not well understood.

Epiph'ysis, A portion of bone connected to another bone by temporary cartilage which subsequently becomes ossified and the two bones or parts then become one.

Epip'loon, The omentum, or caul.

Epispad'ias, An abnormal opening of the urethra upon the upper part of the penis.

Epistax'is, Nose bleed. Make cold applications to the nape of the neck, or raise one or both hands high over the head and hold them for one or two minutes to restore the balance of the circulation.

Epithelio'ma, Cancer of the skin, or mucous membrane.

Epizo'on, A parasite,

Epizoot'ic, A contagious disease affecting animals.

Epsom Salts, Sulphate of magnesium. It is a saline cathartic, Dose one dram to two ounces dissolved in water. Given in dropsy to remove the watery fluid from the tissues.

Is recommended by some authors in peritonitis as a non-irritating cathartic.

Epu'lis, An excrescence on the gum.

Equi'nia, An infectious disease generated in the horse and known as Glanders, or Farcy. It gives rise to profuse discharge from the nostrils and sometimes to pustular eruptions and suppurating tumors.

Erec'tion, Fullness and firmness of certain organs from accumulation of blood in the areolar tissue under states of excitement. The penis, clitoris, and nipple are erectile.

Erec'tor, A name applied to certain muscles whose function it is to straighten up or erect some part.

Er'ethism, Irritation. A state of abnormal susceptibility to disease, as when the system has been poisoned by mercury.

Er'got, Spurred rye. Has been used as a drug to excite uterine contractions and for other purposes, but the propriety of its use is questionable. One of the natural results of poisoning with ergot is gangrene of the extremities. The poisonous constitutional effects of ergot are designated Ergotism.

Erig'eron, Fleabane. 10 to 20 drops of the oil is given by some practitioners in a capsule, or on sugar, to check hæmorrhage in menorrhagia, epistaxis &c.

Eriodic'tyon, Yerba Santa. An unofficial remedy for bronchial affections, chiefly as an expectorant. Is said to cover or conceal to a great extent the taste of quinine. Dose of the fluid extract I5 to 30 drops.

Er'rhine, An agent like snuff of tobacco, poke root, or galangal root that increases nasal secretions.

Eructa'tion, Belching, or discharge of gas from the stomach, and due to fermentation.

Erup'tion, A breaking out. Usually applied to the appearance of a rash upon the skin; It may be in the form of pimples, pustules, or vesicles.

Erysip'elas, A constitutional disease with inflammation of the skin and subcutaneous tissue, swelling and pain. It requires detergent and antiseptic remedies.

Erythe'ma, A name given to an inflammatory blush, or redness of the skin that is noticed in scarlatina, measles, &c. A rose rash.

Erythrox'ylon, Coca. (Must not be confounded with cocoa). A South American shrub lately lauded as a cerebral stimulant but dangerous to use. It depresses the sensory nerves and in large doses produces convulsions, loss of speech

and unconsiousness. Its alkaloid, known as "Cocaine" is a local anæsthetic.

Es'char, A crust or scab following the application of a caustic.

Escharot'ic, Any substance capable of producing an eschar.

Es'march's Bandage, An elastic bandage used upon a limb to drive out the blood previous to amputation, and thus prevent the loss of blood.

Esoter'ic, Interior, or within; private, occult.

Es'sence, An alcoholic solution of a volatile oil. That which gives to anything its peculiar nature. The predominant qualities of any substance separated from grosser parts.

E'ther, The upper air, or subtile fluid that interpenetrates all material bodies and fills the interstellar or planetary spaces. Also an inflammable liquid largely used as an anæsthetic, and as a solvent for fats and oils. See article on chloroform.

Eth'ics, The science of morals.

Ethnol'ogy, Study or science of nations and races.

Etiola'tion, Blanching of plants, or of the complexion from confinement in darkness.

Etiol'ogy, Study or science of causes, Usually applied to causes of disease.

Eucalyp'tus, A tree cultivated in California. A fluid extract of the leaves, and the oil of Eucalyptus are used in medicine as an antiseptic and anti-malarial. Locally applied it is a decided irritant, and when taken it is apt to disturb the stomach, and in large doses affects the pulse and respiration. Is used in hospitals as a deoderizer and in surgical dressing to foul sores. Dose of the oil 1 to 5 drops in emulsion.

Eu'nuch, One rendered impotent by removal of the testicles.

Euon'ymus, Wahoo. Employed in dropsy and liver complaints as a tonic purgative. Dose of the fluid extract ½ to 1 dram.

Eupato'rium perfoliatum, Thoroughwort, or Boneset. An infusion of the herb may be used as a tonic and diaphoretic ad libitum.

Eupato'rium purpureum, Queen of the meadow. The root is used as a diuretic.

Eustachian tube, The canal leading from the throat to the middle ear, or tympanum.

Euthana'sia, A calm and happy death.

Euto'cia, An easy delivery in childbirth.

Evacua'tion, Defecation, or movement of the bowels. An emptying.

Exacerba'tion, Increased violence of symptoms, as when the temperature, or fever rises, or pain increases.

Exan'them, or Exanthe'ma, An eruption, or a disease attended by an eruption of the skin. Small pox, measles and scarlatina are called the major exanthemata (plural of exanthem).

Excip'ient, That part of a prescription which serves as a pleasant or convenient vehicle for the other ingredients or medicines,

Excis'ion, The act of cutting out.

Excoria'tion, An abrasion of the skin. Loss of skin.

Ex'crement, The fæces, or ingesta of the colon, or rectum.

Excre'ta, The natural discharges from the body.

Excre'tion, Act of separating from the body, or the matter itself which is thrown off as waste.

Exfolia'tion, The falling off, or separation of dead bone, or tissue from the living structure.

Ex'ogen, A plant or tree that grows from without by adding an outer layer each year or season.

Exophthal'mos, Protrusion of the eyeball by some abnormal growth or neoplasm.

Exosmo'sis, The passing outwards of a fluid through an animal membrane,

Exosto'sis, An abnormal growth from bone.

Exot'ic, A foreign plant.

Expec'tant, Awaiting. Applied to a plan of treatment which awaits results without active medication.

Expec'torant, A medicine that provokes expectoration.

Ex'pert, A person supposed to be peculiarly fitted to give evidence. One greatly skilled.

Extirpa'tion, Uprooting or thoroughly removing.

Extraction of Cataract, Consists in cutting through the cornea and removing the crystalline lens which when it is opaque obstructs the rays of light.

Extra-u'terine, Outside or beyond the uterus. Applied to some forms of abnormal pregnancy and to life after birth.

Exuda'tion, Oozing of the serum of the blood through the walls of the vessels.

Extravasa'tion, Filtration of blood or of some fluid into adjacent tissues.

F

Fæ'ces, Literally dregs. The ingesta of the lower bowel, or alvine discharges.

Faint, A state of swooning, or syncope.

Faradi'zation, The application of the induced, or Faradic current of electricity to some organ or part of the body.

Fau'ces, This is a Latin word and in that language is used very indefinitely for any narrow passage or entrance. It is properly applied to that part only of the alimentary canal which contains the tonsils, and is bounded at the sides by the anterior and posterior pillars of the soft palate. In the Latin it was used indiscriminately for the œsophagus, pharynx, or trachea.

Fau'na, Originally a godess; now a name for animal life belonging to some special locality or epoch.

Fa'vus, In Latin a honeycomb; now applied to a kind of skin disease, Porrigo or scald head.

Febri'fuge, An agent that reduces fever.

Fel bo'vis, Ox-gall. Used in pills in cases of dyspepsia or indigestion. The gall is evaporated in a water bath to prevent burning.

Felon, Whitlow. (See Paronychia.)

Fermenta'tion, The decomposition of organic snbstances and the formation of new products. The presence of atmospheric air, or oxygen is essential to the process.

The fermentation of milk gives rise to lactic acid; of sugar to alcohol; and the fermentation of nitrogenous substances produces putrefaction. A substance known as a ferment promotes these changes.

Fever, A name applied to certain symptoms of disease, the principle of which is a rise of temperature and accelerated pulse.

Fever-sore, A running sore having its seat upon the bone or periosteum. A sinus, or pipe, conducts the pus, or matter, to the surface. Cleanse the blood and invigorate the life force in the body and the sore will heal. Use an antiseptic wash, like tincture of myrrh to keep the parts clean.

Fi'brin, The principal element generated in the blood for the up-building and repair of the tissues of the body. Pure fibrin is a white elastic substance which separates from the blood on standing and forms the clot on coagulum.

Fibrin'ogen, A fibrin-forming substance found in the blood. The present theory of the formation of fibrin is that two substances, fibrinogen and fibrinoplastin (or paraglobulin) aided by a fibrin ferment unite to form fibrin; but the one important thing to remember is the fact that fibrin is formed from material in the blood, and enters into the structure of the body.

Fi'broid, Structures that have the appearance of white fibrous tissue but are a degenerate product and constitute one kind of tumor.

Fig'wort, Scrophularia nodosa. An herb sometimes used in medicine as an alterative in scrofula, cancer, &c.

Fil'ament, A minute or delicate thread-like structure that forms some part of a nerve, muscle, or tendon. A fibril.

Filter, Something used as a strainer for the purpose of making liquids clear and free from impurities. A thick bibulous paper is sold by apothecaries for this purpose. It is called filtering paper.

Fis'sion, A cleaving, or splitting. A mode of reproduction.

Fis'tula, An abnormal pipe, or canal for the discharge of pus or other excrementitious matter from a deep abscess, or diseased bone. The fistula heals naturally soon after the discharge ceases to be formed or the waste matter is turned fully into its natural channel.

Fit, A sudden paroxism of disease, especially one of epilepsy.

Flat'ulence, The accumulation of gases in the alimentary canal or colon from fermentation.

Flooding, Copius bleeding from the uterus which sometimes occurs during child-birth.

Flou'ren's Doc'trine, That the entire cerebrum is concerned in every psychic process.

Fluctua'tion, The wave-like motion produced in a confined fluid, like pus, by alternate pressure of two fingers, one from each hand placed over the abscess, or contained fluid,

Flu'id, A substance, like water or mercury, that is capable of flowing at ordinary temperatures,

Fœ'tus, The unborn child.

Fol'licle, A small sac.

Fomenta'tion, Act of bathing some part with hot water or other lotions; or of applying cloths wet in hot water.

Fontanelle', An open space between the incompletely ossified bones of the infant cranium. One, the most noticeable, is found at the junction of the two parietal bones with

the frontal bone, At these points the scalp only covers the brain until the fontanelles are obliterated by the ossification of the adjacent bones.

Formica'tion, A peculiar sensation of the skin resembling that produced by the crawling of ants.

Fountain Syringe, An instrument for conveying liquids with more or less force into the rectum, or other canal or passage of the body by natural pressure of the column of fluid contained in the instrument. The instrument consists of a vessel (usually rubber) holding one or more quarts, to the bottom of which a rubber tube with suitable nozzle, is connected, and when this vessel is filled and suspended several feet, usually five or six, above the body of the patient the fluid flows through the tube into the body, cavity, or passage to be filled or washed. All air in the tube should be allowed to escape before the nozzle is introduced.

Frac'ture, The breaking of a bone, or other substance.

Frugiv'orous, Fruit-eating. Living on the productions of the vegetable kingdom.

Fun'dus, The base of an organ. The fundus of the uterus is the upper and larger part of the organ.

Fun'gus, A class of flowerless plants of a low order, comprising toad-stools, smut and the floating scum-like substances of stagnant water.

Furun'culus, A boil, felon, or angry pustule.

Fu'sel oil, Amyl alcohol or "Potatoe Spirit" This is not an oil but an alcohol, and is found in unrectified spirit. It is poisonous when inhaled or taken internally.

G

Galan'ga, East India Catarrh Root. It is sometimes grated or ground and used as a catarrh snuff.

Gall, The bile. The hepatic juice.

Gallon, A standard unit of measure for fluids, containing 231 cubic inches in the United States, and 277.27 in Great Britain. The latter is the imperial gallon.

Gamboge', or Camboge', A drastic cathartic, formerly much used in connection with calomel, especially in dropsy and visceral obstructions.

Gang'lion, A nerve center composed of gray matter, in distinction from white, and communicating with other ganglia nerves, and organs.

Gan'grene, Mortification or death of some part of the body.

Gar'gle, Wash for the throat; or, as a verb, to wash the throat.

Gas, An elastic fluid having the form of air.

Gastral'gia, Pain of the stomach.

Gastric, Relating to the stomach.

Gastri'tis, Inflammation of the stomach.

Gastrodyn'ia, Stomach colic; or pain of the stomach.

Gastrot'omy, Incision of the stomach.

Gaulthe'ria, Wintergreen. Used as a flavor. The tincture is preferred to the essence.

Gavage', (French word, and pronounced garvarzh'). The mode of feeding infants prematurely born by means of a small gutta-percha tube introduced into the œsophagus.

Gel'atine, An albuminoid jelly-like substance obtained by boiling the bones, tendons and ligaments of animals. It is insoluble in cold water and does not pass readily through animal membranes.

Gelsem'ium, The Yellow Jasmine. Has been used in small doses in pleuritis and pneumonia. Is a powerful depressant to the heart and lungs, and in large doses produces paralysis of these organs and death. Dose of the fluid extract, or tincture 1 to 10 drops in one or more spoonfuls of water. Deep breathing to oxidize the blood will properly supersede its use.

Gemma'tion, Budding. A form of reproduction among some of the lower animals, like the polyp and infusoria.

Gentian, A simple bitter. Once highly esteemed as a tonic. It stimulates the appetite.

Germ, The rudiment of a new being, not yet developed. Fruit in embryo. That from which anything is derived.

Germina'tion, The sprouting of a seed, or the beginning of developement of a germ.

Gesta'tion, Act of bearing or carrying, in utero, the embryo or fœtus, Pregnancy.

Gingivi'tis, Inflammation of the gums (gingivæ). Often caused by the use of mercury, or lead.

Gin'seng, An aromatic root slightly bitter.

Gla'cial, Resembling ice; applied to strong acetic acid.

Gland, An organ of the body whose office it is to with-

draw various matters from the blood, or transform nutriment into cells.

Glans Penis, The conical shaped body forming the head of the penis.

Glau'ber's Salt, Sulphate of sodium. Has been used as a purgative, especially for horses.

Glauco'ma, Opacity of the vitreous body or hyaloid membrane, giving a greenish color visible through the pupil. In respect to its cause it is very likely closely related to cataract.

Gleet, A discharge from the urethra which sometimes succeeds urethritis.

Glob'ule, A little globe. A small pill. Any minute spherical structure.

Glos'sa, The tongue. In the Attic dialect glotta.

Glossi'tis, Inflammation of the tongue.

Glot'tis, Rima glottidis, or chink of the glottis. The opening between the vocal cords in the larynx.

Glu'cose, Starch sugar, or grape sugar; made artificially by boiling starch in sulphuric acid; sometimes called "corn syrup". It readily undergoes fermentation, and is not so wholesome for table use as cane sugar, or sucrose. The artificial is liable to contain traces of sulphuric acid.

Glu'ten, The albuminous matter found in wheat and other cereals.

Glyc'erine, A colorless, syrupy substance found combined or contained in fats and fixed oils, and is obtained by decomposing the fats. To be pure, and proper to use as medicine, the crude glycerine must be distilled. When pure it is an emollient, but the impure is irritating. It mixes in all proportions with water and alcohol. With strong nitric acid it forms nitro-glycerine. It also forms explosive mixtures with chromic acid, chlorinated lime, and permanganate of potassium.

Glycerine is sometimes intensely acrid and poisonous on account of the acrolein which may be developed if to great heat is used in its manufacture; and even pure glycerine may be irritating if concentrated. If used in medicine it should be diluted or mixed with other liquids.

Distilled glycerine properly diluted may be found useful applied to chapped hands or fissured lips.

Glyc'erite, A mixture of medicinal substances with glycerine. Only two are official; Glycerite of Starch, and Glycerite of the Yolk of eggs. They are both miscible with water. The glycerites are also called glyceroles.

Glycocholic (Sweet bile) Acid. One of the acids found in the bile.

Glycogen, A white tasteless powder known as animal starch. It is frequently found in the liver and blood. It is not positively known whether it is a normal product, or is wholly abnormal.

Glycosuria, Grape sugar in the urine.

Glycyrrhiza, Licorice root. A demulcent and mild laxative. It forms sixteen per cent of the official "Compound Licorice Powder". Licorice is a popular remedy in coughs and colds, and as an ingredient in lung syrups.

Goitre, Enlargement of the thyroid gland. Bronchocele. Quite common in the region of the Alps. It forms a swelling or wen at the base of the neck in front, and has been called the "Derbyshire neck". May be caused by the use of water containing too much earthy matter.

Golden Seal, Hydrastis. Yellow root. A bitter tonic. Dose ½ to 1 dram of the tincture.

Gold-thread, Coptis. A pure bitter tonic like gentian.

Gonorrhœa, An improper name for urethritis.

Gossypium, Cotton. The oil is used largely as a substitute for olive oil. A fluid extract of cotton root bark is said to act upon the uterus like ergot. The dose is ½ to 1 dram.

Goulard's Extract, A solution of the subacetate of lead; used as a lotion to sprains and bruises, and in ivy poisoning.

Gout, Inflammation of the joints with a deposit around them of urate of soda.

Graduate, To take a degree from a college or university; or the person on whom the degree has been conferred. Also a glass vessel for measuring liquids.

Gramme, The French unit of weight. It is the weight of a cubic centimeter of pure water at its greatest density. About 15½ grains,

Granatum, Pomegranate. Tape-worm remedy. The tænia solium, or long tape-worm, does not live above three hours in a decoction of the bark. The alkaloid of the bark is known as pelletierine.

Gravel, Uric acid deposits in the bladder giving rise to painful micturition. It comes from fermentation and error of diet.

Gravid, Heavy. Applied to the uterus during pregnancy.

Gravity, Weight. A matter of serious import. Specific gravity is the relative weight as compared with some standard. Hydrogen is the standard for gases, and pure water for solids.

Grinde'lia, A plant found in California. Used by some in asthma, and whooping cough. Is said to be antispasmodic. In large doses it dilates the pupil like belladonna.

Grinder's Asthma, Disease of the lungs from inhaling the dust of stones and metals.

Groin, The depression between the belly and thigh. The position of Poupart's Ligament.

Gruel, A decoction of corn-meal or oat-meal.

Guai'acum, The heart of the Lignum Vitæ tree. The fluid extract or decoction has been used as an alterative and diaphoretic in scrofula and tonsillitis.

Gaura'na, A preparation from the seeds of Paullinia. The fluid extract has been used to relieve sick headaches. Dose ½ to 1 dram. The alkaloid is said to be identical with that obtained from coffee.

Guil'lotine, An instrument now sometimes used for excision of the tonsils. Also an instrument for cutting off the heads of condemned persons.

Gul'let, The œsophagus.

Gumma, A gum-like elastic tumor of the periosteum.

Gut, The intestine.

Gut'ta, A drop; some drops are more and others less than a minim, or one-sixtieth of a dram.

Gymnas'tics, Physical exercises taken to develope the muscles and strength.

Gynæcol'ogy, Study of woman; and especially her physical difficulties, or bodily ills.

Gy'ra, Convolutions of the brain. The singular of this word is gyrus.

H

Hab'itat, The natural locality of any animal or plant.

Hæm'a, A Greek prefix signifying blood.

Hæmatem'esis, Vomiting of blood,

Hæm'atin, The coloring matter of the blood. It contains the iron of the blood corpuscles and a proteid, or albuminous residue. Is insoluble in water.

Hæmato'ma, A tumor formed by rupture of one or more blood vessels.

Hæmato'sis, The process of blood making.

Hæmatox'ylon, Logwood.

Hæmatu'ria, Blood in the urine.

Hæmaglo'bin, Contraction of Hæmaglobulin. The principal constituent of the blood corpuscles.

Hæmop'tysis, Spitting of blood.

Hæm'orrhage, Flowing of blood from wounded or broken vessels in the body.

Hæm'orrhoids, Piles. Congestion and distention of the hæmorrhoidal veins attended with pain and soreness. The piles are external, or internal, according to their position within or without the external sphincter muscle. In external piles the mucous membrane of the lower bowel is everted.

Hæmospa'sia, Drawing the blood into the limbs by use of the air pump and vacuum. The receiver of the pnmp is placed over the limb and the air is withdrawn. It is applied by some specialists for venous congestion, epistaxis (bleeding from the nose) and in all cases of hæmorrhage. Others sometimes apply ligatures about the limbs near the body and in this way prevent for the time the return of venous blood to the heart. See the next article below.

Hæmosta'sis, Holding the blood in the limbs by ligatures as described just above. It usually induces sweating. The ligatures are kept on several hours unless pain or fainting ensues.

Hæmostat'ic, Tending to arrest hæmorrhage.

Halicor''is Oleum, Dugong oil. Said to be quite as nutritive and more palatable than cod liver oil. The Dugong is the "Sea hog" of the Indian Ocean.

Hamamel'is, Witch Hazel. Tonic and astringent. Externally used as a wash on foul ulcers. Tincture of myrrh is an excellent application to old sores.

Hang'nail or Agnail, A piece of epidermis at the root of the nail, partially detached, and quite irritating on account of friction to which it is subjected. Remove it, or confine it.

Hare'lip, Congenital fissure of the upper lip. May be partially or imperfectly corrected by the surgeon.

Harts'horn, Ammonia, or ammonium hydrate. Formerly made from the horns of harts.

Hash'eesh, Cannabis Indica, A narcotic poison. It produces intoxication and mental hallucinations. An unreliable drug.

Hay Fever, An irritation of the mucous membrane of the

respiratory passages thought by some to be due to the pollen of plants, or grasses, that ripen in hay time.

Heart'burn, A burning feeling at the cardiac orifice of the stomach, caused by acrid gases from food fermenting in the stomach. It is a symptom of putrefactive fermentation.

Heb'etube, Dulness of the senses and intellect.

Hec'tic, The accustomed flush on the cheek of the consumptive.

Hedeo'ma, Pennyroyal. Stimulant and carminative. Odor repulsive to fleas and mosquitoes.

Hel'lebore, A drastic hydragogue cathartic. It is indigenous in Europe, and is called the "Christmas rose" because it blossoms in the middle of winter. The root is the part used. Bacher's Pills, once celebrated in the treatment of dropsy, consisted chiefly of black hellebore. It is powerful and may produce inflammation of the bowels, vomiting, cramp, and in large doses, death. Dose of the fluid extract 2 to 10 minims.

Hel'ler's Test, A test for albumin in the urine. Hold the test tube inclined and pour a little pure nitric acid down the side of the tube slowly into the urine. If albumen be present a white zone of coagulated albumen may be seen between the acid and urine.

Hemiple'gia, Paralysis of one side of the body due to an affection of the opposite cerebral hemisphere.

Hepat'ic, Relating to the liver.

Hepatiza'tion, Solidification of the lung causing it to resemble the structure of the liver.

Hepati'tis, Inflammation of the liver.

Herbiv'ora, Animals that feed on vegetation.

Hered'ity, Inheritance as applied to organic life.

Hermaph'rodite, An individual whose sex is doubtful owing to some malformation.

Hermet'ic, Pertaining to Hermes (Mercury) the reputed founder of alchemy.

Hermetic sealing, Closing the aperture by melting or otherwise so as to exclude the air.

Her'nia, The escape of some viscus or part from its natural cavity. A rupture. (See Dutton's Illustrated Anatomy).

Her'pes, Tetter. Impetigo. Eczema. Psoriasis. Herpes circinatus. Ringworm.

Hiberna'tion, The winter sleep of certain animals when they lie in a dormant condition.

Hic'cough, or Hicup, A spasmodic contraction of the diaphragm causing an inspiration which is suddenly checked by the closing of the glottis. It is reflex action from some ir-

ritation of the pneumogastric nerves, and probably in the stomach or liver.

Hippocam'pus, A name applied to certain parts of the human brain in the floor of the lateral ventricles, from their resemblance to the sea-horse, a kind of fish.

Histol'ogy, Study of microscopic anatomy.

Hives, Urticaria. A sudden eruption of the skin.

Hom'icide, Man-slaying. Applied in law to slaying without malice or intent.

Homo, Man. The generic name for the human race including male and female.

Homœopathy, A system of medical practice introduced by Hahnemann. Just what Homœopathy is, is somewhat uncertain. The popular opinion is that it bears some relation to the size of the dose, and for this reason it has been called the "little pill" practice; but its adherents deny this and assert that it has nothing to do with the size of the dose. They tell us that Hahnemannism is not Homœopathy. Homœopathy, they tell us is a system of medical practice based upon belief in the law of similars; or the practice of those who medicate in harmony with the law of SIMILIA SIMILIBUS CURANTUR (Like things cure like things, or like cures like). In other words the right remedy for any disease is one that would produce in a well person symptoms similar to those of the disease.

Homoge'neous, Having the same nature through all its parts.

Honey, A sweet substance collected and elaborated by bees from flowers and stored in wax cells of their own make. The flavor and quality of the honey depends upon the food of the bees. In some instances the honey is acrid and even poisonous.

Hore'hound, Marrubium, A tonic, and in large doses laxative. Used mostlv in domestic practice.

Hor'rors, A popular name for delirium tremens. The true remedy for dipsomania is the polarization of the will to truth.

Horse-radish, The fresh root is stimulant, diuretic, and externally rubefacient. Used as a condiment.

Hos'pital, A building for the care and treatment of the sick and infirm.

Hu'mor, A fluid substance of the body, as blood, chyle, lymph,&c. The ancients had four cardinal humors—the blood, phlegm, yellow bile, and black bile. At present only one fluid in the body takes the name of "humor", and that is

the aqueous humor of the eye ball. The humorists who followed Galen attributed all disease to the depraved state of the fluids of the body. The proportion of fluids to solids in the body is 9 or 10 to one.

Hu'mulus, The hop. A tonic and feeble hypnotic. The powder, or pollen that comes from the leaves of the hop (fruit cone) is called lupulin. The hop poultice is a favorite remedy in inflammation. To make it, mix hops, or lupulin, with powdered slippery elm and wet with hot water. Hop tea is a mild hypnotic.

Hunter's canal, A canal in the middle third of the thigh which incloses the femoral artery.

Hydat'id, A watery cyst, or tumor filled with an aqueous fluid.

Hy'dragogue, A purgative that causes liquid discharges from the bowels.

Hydrar'gyrum (liquid silver). Mercury. Is called in Homœopathic books, "Mercurius Vivus" (live mercury).

Commercial mercury generally contains more or less lead, copper and arsenic. It is used for preparing chemical compounds and other mercurial preparations, many of which have been much used in medical practice, but are fast losing their hold upon the confidence of the people.

Blne pill,or blue mass, made of mercury, honey of roses (a most unholy alliance), glycerine, licorice root, and marsh mallow, was once a favorite remedy for constipation and all bilious complaints.

Mercury with chalk (hydrargyrum cum creta) was another favorite remedy which is now discarded by the most intelligent members of the profession.

Calomel, mercurous chloride, was another famous remedy fifty years ago.

Corrosive sublimate, or mercuric chloride, is still used to some extent as an internal remedy, but will we hope be soon confined to the destructive work of killing parasites, to which it is well adapted.

Black wash, a mixture of calomel and lime water, was once applied as a lotion to syphilitic sores.

Yellow wash, corrosive sublimate and lime water, was used for the same purpose.

"Blue ointment," is a mercurial ointment and was used to destroy lice and parasites. For this latter purpose a wash made by dissolving two grains of corrosive sublimate in an ounce of water is preferable.

'Compound Cathartic Pills" of the shops and pharmaco-

pœia contain calomel, colocynth, jalap, and gamboge.

"Citrine Ointment" is made of lard, nitric acid and mercury. It takes its name from its lemon-yellow color. This ointment is sometimes diluted with three times its volume of petroleum ointment.

These preparations and others less known to the public have been variously introduced into the system by the mouth, hypodermic injection, by inunction, and by fumigation. The effect has been to cause a profuse discharge of offensive saliva from the mouth, to loosen the teeth, rot the bones, inflame the tongue and destroy the constitution of thousands. The soluble salts of mercury are highly poisonous and for internal use may be wisely discarded.

Hydras'tis, Golden seal. The principal alkaloid is hydrastin. The latter is an active poison producing convulsions followed by paralysis, as is proved by experiments of Dr. Cerna in Philadelphia. Merk's hydrastin is given in doses of $\frac{1}{4}$ to $\frac{1}{2}$ grain, Of the fluid extract the dose is 5 to 20 minims, though some make it 10 to 30 minims.

Hy'dro, A prefix signifying water, or relating to water.

Hydrocar'bon, A compound of hydrogen and carbon. The hydrocarbons include the oils and fats. They are all inflammable.

Hy'drocele, A watery tumor; usually applied to a collection of serum in the scrotum.

Hydroceph'alus, A collection of serum or watery fluid in the head, usually in the ventricles of the brain,

Hy'drogen, One of the simple elements of matter or of nature. It is an invisible gas and is over fourteen times lighter than air.

Hydrom'eter, An instrument for measuring the specific gravity of watery liquids.

Hydrop'athy, The "Water Cure", or system of medical practice introduced by Priessnitz of Silesia. It makes use of water and discards the use of drugs.

Hydropho'bia, Fear of water. Rabies or madness, supposed to result from the bite of rabid animals, Whether it is purely psychologic or otherwise has not yet been determined,

Hydrother'apy, An other name for "Water Cure".

Hydrotho'rax, Dropsy of the chest. The collection of serum may be in the pleural cavity, or in the heartcase.

Hy'giene, Science and art of health; is too often confounded with the fallible opinions of men.

Hy'men, The god of marriage of the Greeks. In anatomy, the membrane that partially or completely closes the entrance to the vagina in childhood.

Hyge'ia, Goddess of health of the Greeks.

Hygrom'eter, Instrument for determining the amount of moisture in the air.

Hyoscy'amus, Henbane. Is nearly similar in its effect to Belladonna, but said to be less irritating. One of the narcotics.

Hy'per, A Greek prefix signifying above or beyond.

Hyperæ'mia, Congestion, or excess of blood.

Hyperæsthe'sia, Excesive sensibility.

Hypercathar'sis, Excessive purging.

Hypert'rophy, Enlargement of any part of the body from excessive nutrition. Overgrown. Dilatation of the heart from distension is not properly called hypertrophy.

Hypno'sis, Condition induced by hypnotism.

Hyp'notism, Modern Mesmerism, or Psycho-Dynamics. A new name for animal magnetism.

Hypochondri'asis, Condition of one oppressed with melancholy, or unreasonable belief of disease or evil.

Hypoder'mic, Relating to something beneath or under the skin. A late mode of introducing drugs into the circulation, but more or less dangerous.

Hypogas'tric, Beneath the stomach; applied to parts at the lower portion of the abdomen, or to blood vessels that arise there.

Hypoglos'sal, Under the tongue. Name of a nerve—the twelfth cranial. It is the motor nerve of the tongue.

Hypospad'ias, An abnormal termination of the urethra upon the under surface of the penis.

Hyposul'phite of Sodium, An antiseptic salt and laxative. Sometimes given in 15 grain doses in forms of zymotic disease.

Hypoth'enar, Under the sole or on the palm. Applied to the fleshy eminence of the palm over the metacarpal bone above the little finger.

Hypoth'esis, A theory. Something set forth for discussion. A supposition.

Hys'tera, The Greek for uterus, or womb.

Hysteral'gia, Pain in the womb.

Hysteratre'sia Imperforate condition of the womb. Occlusion of the os uteri.

Hysterec'tomy, Surgical removal of the uterus by use of the knife.

Hyste'ria, A neurosis, or nervous disturbance supposed to be due to some disorder of the womb. A Similar affection in the male takes the name of Hypochondriasis.

Hyster'ics, Fits peculiar to women.

Hystero-epilepsy, Epileptic convulsions arising from the uterus, or from erotic delirium.

I

I'chor, A thin, watery discharge from wounds and ulcers.

Ichthyocol'la, Isinglass. The inner membrane of the air-bladder of fishes. Fish-glue. Is often confounded with gelatine. The latter is made from the skins and tendons of calves, and dissolves in cold water, while isinglass does not.

Ich'thyol, A thick brown or dark yellow fluid containing considerable sulphur. It is from a bituminous quartz in Europe in which are found the fossil remains of fish. It mixes with oils, lanoline, &c., and is used as an ointment in eczema and psoriasis.

Ichthyo'sis, Fish-skin disease.

Ic'terus, Jaundice.

Identi'ty, Absolute sameness.

Id'iocy, Mental deficiency.

Idiopath'ic, Relating to a disease peculiar to itself; not symptomatic of another.

Idiosyn'crasy, Peculiar composition. A temperament or quality peculiar to the individual.

Id'iot, A person devoid of understanding.

Ileo-cæ'cal, Relating to both the ileum and cæcum. Applied to a valve at the lower end of the small intestine.

Il'eum, The lower part or half of the small intestine.

Ileo-pectin'eal, Relating to a line of the pubis at the brim of the pelvis.

Illegit'imate, Not in accord with statute law. Born out of wedlock.

Imper'forate, Not pierced by an opening.

Impeti'go, Pustular inflammation of the skin. Humid tetter or scall.

Im'potence' Inability. Incapacity to procreate.

Inani'tion, Emptyness. Starvation.

Incandes'cent, Heated to a white heat.

Incarcera'tion, Imprisonment or confinement.

In'cest, Not chastity. Carnal intercourse between persons that cannot lawfully be united.

Incinera'tion, Reducing to ashes.

Incised', Made by a sharp-edged instrument.

Incis'ion, Act of cutting, or an opening made with a sharp knife.

Incon'tinence, Inability to contain the contents of the bowel or bladder,

Incuba'tion, Hatching. The period that elapses between the exposure and attack of a contagious desease.

In'cus, A very small bone situated between the malleus and stapes of the tympanum (middle ear).

In'dol, A poisonous product of intestinal putrefaction. It gives an unpleasant odor to the alvine secretion.

Indura'tion, Hardening.

In'fant, Literally one not speaking. A babe. In English law, one under age.

Infan'ticide, Slaying of an infant.

Infarc'tion, Filling or plugging of a vessel by a clot (embolus).

Infec'tion, Act of communicating some contagious disease.

Infiltra'tion, Penetration of fluids into the cellular tissue, Abnormal diffusion of any fluid into a tissue.

Inflammation (set on fire), Is the common term applied to the stasis or stagnation of the blood in any part or organ of the body, attended by one or more of the five following symptoms, viz: heat, pain, redness, swelling and impairment of function. It is due to excess of fibrin in the blood, or to other matter that obstructs the circulation. So long as the blood continues to circulate normally in the part there is no inflammation. Stagnation soon leads to infiltration of the surrounding parts and this produces swelling, and in all sensitive parts pain. Parts destitute of red blood when inflamed do not manifest redness, and give rise to what is sometimes called "white swelling". The average proportion of fibrin in healthy blood is only about three-tenths of one per cent. In inflammation it rises as high as ten-tenths, or one per cent. We can reduce the fibrin in the blood by reducing the amount of albuminous food taken. External inflammation is generally readily detected by its visible symptoms of redness and swelling; internal, by disturbance of function, pain and soreness. The coagulation of blood containing an excess of fibrin is doubtless the most common cause of inflammation.

Infla'tion, Puffed up with air, or gas,

Influen'za, A bad "cold", once supposed to be due to the influence of the stars.

Infra-or'bital, Beneath the orbit.

Infundib'uliform, Funnel-shaped.

Infuso'ria, A class of micro-organisms belonging to the order of Protozoa, or first or lowest class of animals.

Ingesta, Matters borne along, or contained in the intestinal tract, or canal.

In'gluvin, Preparation from the fowl's gizzard.

In'guinal, Pertaining to the groin.

Inhala'tion, The inspiration of air, or vapor.

Inha'ler, An instrument for inhaling vapor.

Inhibi'tion, Act of checking or restraining,

Inhib'itory, Having power to restrain.

Injec'tion, Act of throwing some liquid or solution into some canal, passage or part of the body by means of a syringe,

Injections are frequently made into the rectum and colon, into the vagina, urethra, and nasal passages, and sometimes into the bladder, stomach, uterus and abnormal cavities. The best syringe is the "Fountain Syringe", as it is self-acting. Injections into the bladder are best made through a double current catheter, one arm of the catheter being connected to the rubber tube of a fountain syringe and when the air in the catheter has been expelled, the instrument is introduced into the bladder and the fluid allowed to run. It flows through the bladder and out through the other arm of the catheter.

Urethral injections are made with a syringe having a conical end which is pressed into the orifice of the urethra. It is properly called a urethral syringe.

The stomach is sometimes washed out by passing a tube through the œsophagus and when the stomach is filled it can be emptied by depressing or lowering the external end of the tube below the level of the stomach and thus cause it to act as a siphon.

Hypodermic or subcutaneous injections are now quite common in the profession but are always more or less dangerous.

Innerva'tion, Act of supplying with nerve force.

Innom'inate, Literally, "nameless". Applied to two bones, an artery, and a vein in the body.

Inocula'tion, Engrafting. Applied to the introduction of infectious matter into some part of the body. The practice is now going out of use.

Inoscula'tion, The joining or uniting of blood-vessels with each other. Anastomosis from the Greek has the same meaning.

In'osit, A variety of sugar found in muscular tissue.

In'quest, An inquiry by proper authority to ascertain the cause of sudden and violent deaths.

Insaliva'tion, Mixing of saliva with the food during mastication.

Insan'ity, Unsoundness of mind.

Insid'ious, Hidden from view, or perceived only with difficulty.

In Si'tu, In its natural position.

Insom'nia, Not able to sleep. Wakefulness.

Inspira'tion, Drawing in of the breath.

Insuffla'tion, Blowing of a fine powder into a cavity or upon some surface.

Inter'ment, Burial of the body.

Intermit'tent, Occuring at intervals regular or irregular.

Interos'seous, Between bones.

In'terstice, A small space among fibers or other parts.

Intes'tinal, Pertaining to the intestine.

In'tima, The innermost coat.

Intra-oc'ular, Within the globe of the eye.

Intra-uterine, Within the womb.

Intumes'cence, Swelling.

Intussuscep'tion, Telescoping of the bowel.

Inunc'tion, Oiling or rubbing an ointment into the skin.

In'valid, One in feeble health.

Inva'sion, The coming on or attack of disease.

Invertebra'ta, Animals having no vertebrae or spinal column.

I'odine, One of the 67 elements of nature.

Iod'oform, Iodoform powder has been used as an antiseptic application but poisoning has occurred from absorption from wounded surfaces.

Ipecacuan'ha, More commonly called Ipecac. Root of a plant found in Brazil. It is a reliable emetic.

Iridec'tomy, Cutting out a part of the iris.

I'ris, Colored portion of the eye which serves as a curtain to exclude excess of light. Also, Blue Flag. The latter is a hydragogue cathartic and alterative.

Iri'tis, Inflammation of the iris.

Irriga'tion, Application of water in streams.

Irritant, Something that disturbs or excites.

Isomer'ic, Having the same elements in the same propor-

tion or measures but differing in quality. The explanation of isomerism is still a problem in chemistry.

Ischiat'ic, Pertaining to the lower part of the hip bone. Contracted to Sciatic.

Isotherm'al, Lines of equal heat.

Is'sue, A discharging sore, sometimes produced purposely.

Isth'mus, The narrow or constricted part.

I'vy-poisoning, Apply a weak solution—one part to forty of water, of sulphate of copper (bluestone), three grains to an ounce of water, or a weak solution of subacetate of lead. The latter is known as Goulard's Extract.

J

Jaboran'di, The leaves of Pilocarpus. A powerful diaphoretic and sialagogue.

Jalap, The root of a plant once much used as a cathartic in combination with calomel.

Jaun'dice, Liver complaint, characterized by yellow discoloration of the skin and white of the eye.

Jes'uits' Bark, Cinchona or Peruvian bark from which quinine is made.

Jurispru'dence, The legal aspect of medicine.

K

Katab'olism, A term signifying to throw down. Destructive metabolism. A degeneration of cells.

Kataphore'sis, Medication by means of the electrical current. By placing the matter to be introduced upon the sponge of the positive pole of the battery the current carries more or less of the medicament into the system when the circuit is completed.

Kil'ogramme, 1000 grams—two and two-tenths pounds avoirdupois.

Kilome'tre, 1000 meters—1093.6 yards.
Kinesip'athy, The movement cure.
Kinet'ic, That which produces motion.
King's Evil, Scrofula. Supposed to be cured by the touch of the King.
Kis'singen, A laxative mineral water of Bavaria.
Krause's End-bulbs, Terminal bodies of sensory nerves in the skin, sometimes called Tactile corpuscles.
Ky'estine, A filmy deposit on decomposing urine. once erroneously supposed to be diagnostic of pregnancy.

L

La'bia, The lip or lips. A Latin word.
La'bor, Parturition. Process of childbirth.
Lab'oratory, A place for experimental work.
Lab'yrinth, A winding maze;—the internal ear.
Lacera'tion, Act or effect of tearing.
Lach'rymal, Relating to tears which are secreted by the lachrymal glands.
Lacta'tion, Period or act of suckling.
Lac'teals, The lymphatics of the small intestine that carry chyle.
Lac'tic, Relating to milk.
Lactifer'ous, Milk bearing.
Lactom'eter, An instrument for measuring the specific gravity of milk.
Lac'tose, Sugar of milk.
Lactu'ca, Wild lettuce. Soporific and anodyne. Its important constituent is called lactucarium.
Lactuca'rium, Lettuce. A mild nervine.
Lacu'na, A small space or irregular cavity of bone.
Ladies Slipper, A kind of Valerian. Cypripedium.
Lamark'ism, Lamark's theory of evolution. It embraces spontaneous generation of the lowest forms of animal life.
Lamel'la, A small or thin plate of bone, or scale-like substance.
Lam'ina, A plate, or thin stratum.
Lamina'ria, A kind of sea plant from the stem of which

has been constructed instruments for dilating canals like the urethra, and cervix uteri. Their use in the uterus is attended with danger.

Lan'cet, A small lance for opening abscesses or making other incisions.

Lan'olin, Fat obtained from sheeps' wool.

Laparot'omy, Cutting into or dividing the abdominal wall. Sometimes to relieve strangulated hernia and for various other purposes.

Lap'pa, Burdock. Aperient and diuretic. The bark of the root or its extract is used in pills and blood medicines by botanic physicians.

Lar'va, The caterpillar or grub state of insect life. A mask. The larva changes to the chrysalis, or pupa before it becomes an insect.

Laryn'geal, Relating to the larynx, or organ of voice.

Laryngi'tis, Inflammation of the larynx.

Laryn'goscope, An Instrument, or small mirror for examination of the larynx.

Laryngot'omy, Incision of the larynx.

Las'situde, Weariness. Prostration. Languor.

La'tent, Concealed or hidden.

Lat'eral, Relating to the side of anything.

Laud'anum, Tincture of opium. It becomes concentraed by age.

Lav'ender, The flowers of an aromatic plant. The compound tincture of lavender is used for flavoring medicines.

Lax'ative, A mild purgative.

Laxa'tor, Anything that loosens or relaxes.

Lec'ithin, A nitrogenous substance found in nerve matter.

Leech, A blood sucking animal.

Legu'min, A vegetable albuminoid found in peas and beans.

Lens, A transparent substance, usually of glass or crystal, of regular shape, for refracting the rays of light.

Lep'ra, Leprosy. A malignant disease more or less prevalent in Europe and Asia.

Leptan'dra, Culver's Root. Used by Eclectic physicians as a cholagogue.

Le'sion, Injury, wound, or pathological alteration of structure.

Le'thal, Deadly.

Leth'argy, Heavy stupor or drowsiness.

Leucæ'mia, or Leucocythæ'mia, An excess of white corpuscles in the blood.

Leu'cin, A crystalline substance and product of fermentation.

Leuco'ma, Opacity of the cornea.

Leuco'maines, Products of fermentation or of retrograde metamorphosis. Some are poisonous and some not poisonous. They take their name from a Greek word signifying the "white of egg", an albuminous substance.

Leucorrhœ'a, A discharge of whitish matter from the vagina, somewhat resembling that of urethritis in the male; vulgarly called "Whites".

Ley'den Jar, A glass jar coated within and without with tinfoil and having at the top a knob connected with the inner coating. It is used for storing electricity and is discharged by connecting the inner coating or knob with the outer coating.

Libid'inous, Lustful.

Life, A function or manifestation of spirit.

Life Root, Senecio aureus. Considered to be a tonic, especially to mucous surfaces,

Lig'ature, A thread or other material for tying arteries and veins, &c.

Lime, A kind of fruit resembling the lemon. Also, calcined limestone.

Li'mon, Latin for Lemon. The fruit of Citrus Limonum.

Lin'dera, Bark of spicebush or Feverbush. Aromatic stimulant and tonic. A weak hot infusion is diaphoretic and may be taken ad libitum.

Lin'ea, Latin word for Line.

Ling's System, Sweedish movement Cure.

Linimentum, Latin for Liniment.

Lin'seed, Flaxseed.

Lipo'ma, A fatty tumor.

Liq'uorice, Glycyrrhiza, Licorice.

Listerism, Treatment of wounds by use of antiseptics, introduced to the profession by Sir Joseph Lister. The ideal dressing at present is the application of a gauze impregnated with a solution of cyanide of zinc and mercury. One part to 1200 of water prevents putrefaction.

Lis'terine, Trade name of a liquid antiseptic compound much esteemed by many. It contains benzoic and boric acids, thyme, eucalyptus, baptisia, gaultheria, and a kind of mint (Mentha Arvensis).

Lith'ic acid, Same as uric acid.

Lith'ium, One of the rarer alkaline metals, and the lightest of all. The carbonate and citrate are given as solvents of uric acid, Dose of the citrate of lithium 1 to 10 grains dissolved in water.

Lithot'omy, Cutting for stone in the bladder.

Lithrot'rity, or lithotripsy, Crushing a stone in the bladder into parts small enough to pass the urethra.

Lit'mus, A blue pigment obtained from a lichen. To prepare test paper dip pieces of white unsized paper in tincture of litmus and then dry. Acids turn this paper red soon as they touch it. Tincture of litmus may be turned red by adding a little dilute hydrochloric acid.

Lit'ter, A couch for carrying the sick or wounded.

Livid, Discolored from the effects of venous blood or contusion.

Lobe'lia, A powerful vegetable emetic and anti-spasmodic. Indian tobacco. Once a noted Thompsonian remedy.

Lob'ulus, A small lobe.

Lo'chia, A term applied to the more or less bloody discharge from the uterus after childbirth. It flows from that part of the uterus to which the placenta was attached and usually continues for about two weeks. Is also called the cleansings.

Locomotor Atax'ia, Unsteadiness of gait attending injury of the posterior columns of the spinal cord.

Loins, Part of the back just above the sacrum. The region of the lumbar vertebræ.

Longev'ity, Long life.

Lo'tion, A wash. Any medicinal solution for external use.

Lumba'go, Rheumatism in the loins.

Lum'bar, Relating to the loins.

Lu'nacy, Insanity, formerly supposed to be due to influence of the moon.

Lungs, The essential organs of respiration. They occupy the cavity of the chest and use up about five per cent of the inspired air.

Lu'pulin, Another name for the hop, or for the flour of the hop.

Lupus, Latin term for wolf. It is applied to a kind of sore or cancer, more common in Europe.

Lu'sus Natu'ræ, A play or freak of nature.

Luxa'tion, Dislocation.

Ly'sis, A loosening; applied to the decline of disease, especially of fever.

Macera'tion, Extraction of the medicinal qualities of a substance by steeping or infusing.

Macrobiot'ics, The art of securing longevity.

Mac'rocosm, The great world or universe, in contradistinction to man, who is sometimes called the microcosm or little world.

Macrotin, A resinoid prepared from Black Cohosh.

Mac'ula, A small spot or patch.

Magne'sium, One of the elementary bodies. It is antacid and laxative.

Mag'net, Lodestone. Also a magnetized piece of steel that will attract other light or small bodies like iron filings and tacks.

Mag'netism, The property of attraction, manifested by some iron ores. What is now called hypnotism was in its earlier days called Animal Magnetism, or Mesmerism.

Magnet-operation, Removing particles of steel from the eye by aid of a magnet held close to the eye.

Mal'ady, Any illness, or disease.

Malaise', French word for a general feeling of illness and discomfort.

Mala'ria, Bad air. Micro-organisms of marshy places that in certain bilious conditions of the system give rise to ague and fever.

Malassimila'tion, Imperfect nutrition.

Mal de Mer, French phrase for Sea-sickness.

Malforma'tion, Deformity.

Malig'nant, Bad; evil. Applied to any disease that generally hastens to a fatal termination.

Malle'olus, A little hammer. Applied to a process of bone on either side of the ankle. The inner malleolus is a process of the tibia, and the outer of the fibula.

Malposi'tion, An abnormal position.

Malprac'tice, Any medical treatment considered by the profession wrong, improper or unscientific. Erroneous or injurious practice.

Malt. Barley, germinated until the maximum amount of diastase, a kind of ferment, is developed. The diastase is said to convert starch into sugar.

Malthu'sianism. Doctrine of Malthus. He held that the natural increase of population is proportionately greater than the increase in the means of subsistence; that the ratio of in-

crease of population is geometrical, while that of subsistence is arithmetical. Both are largely under the dominion of man.

Malpresenta'tion, Bad presentation.

Malt liquors, Liquors made by fermenting solutions of malt; beer, ale and porter.

Mamma, The child's term for mother, Also the milk secreting gland.

Mamma'lia, Animals that suckle their young. It includes all the higher vertebrates, mammals.

Mammi'tis, Inflammation of the mamma.

Mange, A disease of domestic quadrupeds infested by parasites.

Ma'nia, Madness, or insanity.

Man'icure, The process of treating and beautifying the hand; or one who treats the hand.

Man'ikin, A miniature man, or model of the human body, of plaster, wax, or papier mache. Those made by Auzoux of Paris are justly celebrated.

Manipula'tion, Kneading or treating with the hand.

Man'na, The exudation of the flowering ash, and some other trees. A mild laxative.

Maras'mus, Emaciation. Wasting of flesh.

Mar'garin, A fatty preparation prepared as a substitute for butter.

Mar'melade, A conserve originally prepared from the quince, but now often from the orange.

Mar'row, A fatty substance found in the cavities of the larger bones. The spinal marrow is another name for the spinal cord. It is very different from the marrow of bones.

Marru'bium, Horehound. A tonic and laxative.

Massage, A French word derived from the Greek and signifying to knead. Manipulation.

Mastica'tion, The process of chewing food and mixing it with saliva.

Mastodyn'ia, Pain in the female breast.

Masturba'tion, Secret vice. Production of the venereal orgasm by use of the hand. It signifies ravishing.

Mate'ria Medica, Medical materials. It includes all materials used as medicines.

Mat'ico, A vegetable astringent and styptic. The leaves are the part used.

Matric'ulate, To be admitted as member of a college.

Ma'trix, The part or tissue into which the nail of the finger is set.

Matura'tion, Period of ripening. Period when pus is formed in an abscess.

Max'imum, The greatest. Maximum dose, the largest dose that may be given safely, or by authority.

McMunn's Elixir, A liquid preparation of opium.

Mea'sles, An infectious disease, characterized by catarrhal symptoms and an eruption of the skin. It is one of the three major exanthemata. The other two are small pox and scarlatina.

Mea'tus, A passage. Entrance to the ear, and also a passage through the nose.

Meco'nium, The first fæcal discharges of the new born child.

Mediasti'num, The middle space of the chest, or space between the lungs. The heart lies in the middle mediastinum.

Med'icament, A medicine. Medicamentum.

Med'icine, The science and art of healing. In a more restricted sense, anything proper, useful or necessary for the recovery of health.

Me'dius, Latin for "middle."

Medul'la, Pith or marrow. Upper part of the spinal cord.

Me'grim (French Migraine), Sick-headache, more or less unilateral and often associated with nausea and vomiting. A symptom of indigestion.

Meibo'mian Glands, Glands of the eyelids that secrete a sebaceous substance to anoint the free edge of the lids and prevent the tears from contact with the skin.

Melanchol'ia, (Signifying black bile). Latin for melancholy.

Mel'anin, Black pigment that stains the tissues of a dark color, as in the choroid coat of the eye.

Menin'ges (membranes), A name applied to the serous coverings of the brain.

Meningi'tis, Inflammation of the meninges.

Men'opause, Menstrual cessation. Usually occurs at about 45 years of age but may deviate 10 or 15 years, earlier or later.

Menorrha'gia, Excessive menstrual flow.

Menorrhœ'a, Menstrual flow.

Men'ses, Monthlies, Periods of menstruation.

Menstrua'tion, Function of the female organism which carries the ovum into the uterus, and discharges it unless im-

pregnated. It is attended by a more or less sanguineous discharge.

Mentha Piperi'ta, Peppermint. An aromatic stimulant.

Mentha Vir'idis, Spearmint.

Men'thol, A kind of camphor made from oil of peppermint.

Mephit'ic, Having the nature of a noxious vapor.

Mercu'rialism, The effects of mercury. Salivation, loosening of the teeth, and eczema are prominent symptoms of mercurialism.

Mercury, See Hydrargyrum.

Mes'entery, Fold of peritone'um that connects the intestine with the posterior wall of the abdomen.

Mes'merism, Doctrines of Anthony Mesmer; now more commonly called Animal Magnetism, Hypnotism, or Psycho-Dynamics.

Mes'o, A Greek prefix signifying Middle.

Mesoco'lon, That part of the mesentery that connects the colon or large bowel with the wall of the abdomen.

Mes'orec'tum, A fold of peritoneum that connects the rectum with the sacrum.

Metab'olism, An undefined transformation or change that takes place in cells and tissues when undergoing either construction, or destruction.

Metacar'pus, The bones that form the palm of the hand, or that part which lies between the wrist and fingers.

Metamor'phosis, A change of form, or transformation of organisms that some animals undergo.

Metaphy'sics (after physics), Mental or spiritual science, or the study of super-sensuous phenomena.

Metas'tasis, Transposition, or change of place of symptoms of disease to some other part of the body.

Metatar'sus, That part of the foot, or bones of the skeleton, situated between the ankle and toes. It contains five bones.

Meth'yl, A radical in chemistry. Its formula is CH_3. It is the base of a very poisonous alcohol. The principal symptoms of poisoning by methyl alcohol are difficulty of breathing, muscle-tremors and convulsions.

Meth'yline Bichlo'ride, An anæsthetic sometimes used in place of chloroform.

Me'tra, Greek word for uterus, or womb.

Metric System, The French or decimal system of weights and measures. The unit of this system is the meter

(measure). The meter is 1-10,000,000 part of the distance from the equator to the pole, and equals 39.37 inches. The meter is divided into tenths, hundredths and thousandths, or decimeters, centimeters, and millimeters; and one thousand meters is called a Kilometer. The unit of capacity is the liter which is a cubic decimeter, and equals 2.11 U. S. pints or a fraction more than one quart, or $1\frac{3}{4}$ imperial pints. The unit of weight is the gramme which is the weight of a thousandth part of a liter of distilled water at its greatest density, 4 deg. C. The gramme is equal to 15.4 grains.

Metri'tis, Inflammation of the uterus.

Metrodyn'ia, Pain of the uterus, or womb.

Meze'reum, The bark of Daphne mezereum. A powerful sialagogue and irritant poison. It is an ingredient of the Compound Syrup of Sarsaparilla.

Mi'asm, Germs of microbic life which are supposed to be the cause of intermittent fever.

Mic'robe, Micro-organism. A microscopic organic structure, either animal or vegetable.

Mic'rocosm, The little world. Man as the epitome of the universe.

Mi'croscope, A glass, lens, or instrument for viewing objects too small to be seen with the naked eye.

Micturi'tion, Act of passing water. Urination.

Migra'tion, The departure or passage of birds or other animals to other climates. Wandering.

Mil'dew, Any fungus upon vegetable matter that produces discoloration.

Milk, A nutritive fluid secreted by the mammary glands. It consists of albuminous matter known as casein; fatty matter which when collected together is called butter; lactose, a form of sugar; some mineral salts; and about 88 per cent of water. When milk is allowed to stand the fatty matter rises to the top and constitutes what is called cream. When the cream is churned it separates into butter and buttermilk. The latter contains the albuminous matter but not the fat except some particles of butter that may have been left in it. The cream constitutes about 10 per cent of good rich milk.

Milkweed, See Asclepias.

Mind, A generic term including soul, or souls, and some manifestation of spirit. The invisible man. The combined intellectual faculties. That which thinks and remembers.

Minim, The one-sixtieth of a dram of any liquid. A drop may be more or less than a minim, depending upon the natnre of the fluid and the shape of the containing vessel.

Mirage, An illusion caused by the reflection of objects from a stratum of air.

Mir'ror, A polished surface, or silvered glass which reflects light.

Miscar'riage, See Abortion.

Mis'tletoe, A European parasitical plant. It grows on fruit trees, thorn, ash, &c., forming a pendent evergreen bush.

Mite, A small insect, or minute creature.

Mit'igating, Assuaging, softening, or allaying.

Mo'dus Operan'di (mode of operating), Method of performance.

Mol'ecule, A little mass. The smallest quantity of any substance that can be taken, or considered without destroying the substance, or changing its nature. The molecule consists or is made up of two or more atoms according to modern chemistry. The molecular weight of a molecule is equal to the sum of the weights of its constituent atoms as compared with the weight of an atom of hydrogen which is taken as the standard.

Moli'men, Effort or endeavor, as of the menstrual function.

Molli'ties, Softening.

Momen'tum, Force of a moving body. It is estimated as the product of the weight of the body by its velocity, and formula is, m. equals wv.

Mon, or mono, A Greek prefix denoting one.

Monœcious (one house, or one domicile), Applied to a plant, likə Indian corn, which has both male and female organs on the same stock. The hop is diœcious as there is a separate male and a female plant.

Monoma'nia, Madness on one subject only.

Moore's Test (for sugar), Add caustic potash or soda until the mixture is strongly alkaline, then boil. If sugar be present a yellow, brown, or brownish-black coloration is obtained by oxidation of the carbon in the sugar.

Morbif'ic, Disease producing.

Mor'dant, A substance used in dying to fix, or set color.

Morgue, A dead house. A place where the unknown dead are laid or exposed for identification.

Mor'ibund, About to dye. Dying.

Mor'phine, The principal alkaloid of Opium. It is anodyne, hypnotic, and narcotic. The dose of morphine as given by authors is one-eighth to one-half grain, though some restrict the maximum dose to one-fourth grain.

Morphol'ogy, Study of forms, or shapes.

Mors, Latin word for death.

Moto'res Oculorum, Movers of the eyes. Name of cranial nerves, third pair, that control several muscles of the eyeball.

Mox'a, A burning substance applied to the skin as a cautery.

Mu'cous, Relating to a membrane which secretes a viscid liquid called mucus; or to the secretion itself.

Mul'lein, Verbascum. A well known plant whose leaves are emollient and demulcent. The infusion is a popular domestic remedy in phthisis, and inflammations of the mucous surfaces.

Mul'ti, A Latin prefix signifying many.

Multip'ara, One bearing several or many offspring.

Muriat'ic, Common word for Hydrochloric.

Mus'cæ Volitantes, Floating spots in the field of vision due to imperfections in the transparent media of the eye. Usually a symptom of dyspepsia.

Mus'carine, The toxic principle, or ptomaine, of poisonous mushrooms, or decomposing haddock. It produces convulsions and death of rabbits in very small doses.

Mus'cles, For complete table or alphabetic list of the muscles, their use and nerve supply see the Appendix of Dutton's Illustrated Anatomy.

Must, The unfiltered and unfermented juice of the grape.

Mus'tard, Sinapis. A powerful rubefacient; internally, in large doses it is emetic.

Mute, Dumb. Unable to use articulate speech.

Mutila'tion, Act of cutting off, marring or destroying some part of the body.

Mydri'asis, Abnormal dilatation of the pupil of the eye.

Mydriat'ic, A medicine or agent which causes mydriasis.

Myeli'tis, Inflammation of the spinal cord.

Myelo'ma, A tumor of the medullary substance.

Myo'ma, A muscular tumor.

Myo'pia, Near-sightedness.

Myop'ic, Near-sighted.

My'osin, The coagulable part of muscle-plasma.

Myosis, Abnormal smallness of the pupil.

Myrrh, A resinous substance obtained from a tree in Arabia.

Myxo'ma, A mucous-like or colloid tumor.

N

Næ'vus, A birthmark due to dilatation of the blood vessels, or capillaries.

Nape, The back part of the neck.

Narco'sis, The benumbing effect of narcotics.

Nas'myth's Membrane, The delicate membrane over the enamel of the teeth during their early developement. It is known as the skin of the teeth.

Na'trium, Latin for Sodium, the base of common salt.

Nau'sea, Sickness with inclination to vomit.

Necro'sis, Death of bone.

Neo, A Greek prefix signifying New.

Neonato'rum, Of those newly born.

Ne'oplasm, A new growth.

Nepen'the, An old name for anodyne.

Nephri'tis, Inflammation of the kidney.

Ner'vine, A remedy that calms nervous excitement.

Nerve, See Dutton's Anatomy.

Neuralgia, Nerve pain.

Neurasthe'nia, Debility of the nervous system.

Neurec'tomy, Operation for removing some nerve or part of a nerve.

Neuri'tis, Inflammation of a nerve.

Neurol'ogy, Study of the nerves.

Neuro'ma, A nerve tumor.

Neuropath'ic. Pertaining to nervous diseases.

Neuro'sis, Affection of the nerves.

Neurot'omy, Division or cutting of a nerve.

Nic'otine, The poisonous principle of tobacco.

Night'mare, A feeling of distress during sleep, attended with fright and hideous dreams.

Ni'trate, Any salt of nitric acid. The nitrates are all soluble in water.

Ni'trite, A salt formed by the union of nitrous acid with a base. It is a chemical term.

Ni'trogen, A gas at ordinary temperatures, and one of the constituents of the atmosphere, of ammonia, of various acids, and of a great number of animal and vegetable tissues.

Nitroglyc'erine, An oily liquid, very explosive.

Nitro-muriatic acid, Aqua Regia.

Nitrous Oxide, Laughing Gas. Used as an anæsthetic in dentistry.

Noli Me Tangere, "Touch me not". An ulcer, or sore that may heal if not irritated.

Nomencla'ture, Study and arrangement of names or technical terms.

Non Compos Mentis, Not of sound mind.

Nos'odes, Products of disease.

Nosol'ogy, A treatise on the classification of diseases (so called). It is only an attempt to classify symptoms.

Nostal'gia, Homesickness.

Nos'trum, A cure all.

No'tochord, The cord in the embryo that developes into the vertebral column.

Nox'ious, Harmful.

Nu'bile, Marriageable.

Nu'cha, Nape of the neck.

Nu'cleus, The center around which the mass of a crystal forms. In physiology the small body within, and distinct from protoplasm that forms the cell.

Nux Vomica, The seed from which strychnine is made. It is an active poison but is considered a tonic in regular or ordinary Allopathic Practice.

Nymphoma'nia, Excessive sexual desire on the part of women.

O

Obes'ity, Fatness. Corpulence.

Obit'uary, Notice of one dead.

Obstet'rics, The old term for Tokology.

Oc'ciput, The back part of the head.

Occlu'sion, A shutting up. Imperforation.

O'chre, Clay colored by oxides of iron.

Octa'rius, One pint, or eighth of a gallon.

Odontal'gia, Toothache.

Odonti'tis, Inflammation of a tooth.

Œde'ma, Swelling due to an effusion of serum.

Œsoph'agus, The gullet. It carries the food and drink into the stomach.

Œs'trum, The orgasm or sensation at the crisis of coition.

Offi'cial, Sanctioned by authority.

Ohm, The unit of resistance in electricity. It is the re-

sistance of a silver wire one metre long and one millimeter in diameter.

O'leate, A salt composed of a base and oleic acid.

Olec'ranon, The head of the ulna at the elbow.

Oleomar'garine, Artificial butter. It is chiefly tallow, or suet, flavored with butter.

Olfac'tion, Act of smelling.

Olive oil, Salad oil. The expressed oil from the fruit of Oleo Europa. Nutrative and laxative. Often adulterated with cotton seed oil, or replaced with the latter.

Omen'tum A fold of the peritoneum which covers the bowels. See works on Anatomy.

Omniv'orous, Devouring all kinds of food.

O'nanism, Incomplete coitus. Masturbation.

Ontol'ogy, Logic, or Science of Being.

Ony'chia, A chronic inflammation of the matrix of the nail.

Opac'ity, A condition of matter that prevents or destroys transparency. An opake body does not transmit light.

Opera'tion, A surgical procedure upon the body.

Ophthal'mia, Inflammation of the eye.

Ophthal'moscope, An instrument for examining the interior of the eyeball.

O'piate, A preparation of opium.

O'pium, See article on Opium in U. S. Dispensatory, and in Dutton's New Medical Practice.

Oophorec'tomy Excision of the ovary; Battey's operation to hasten the menopause.

Op'tics, Science of light and vision.

Or'bit, The bony cavity of the eyeball.

Orchi'tis, Inflammation of the testicle.

Or'dure, Dung, excrement, filth.

Or'gan, An instrument or part of the body having a distinct function.

Or'gasm, The crisis of venereal passion.

Or'piment, King's yellow. It consists of sulphur and arsenic and is poisonous.

Orris root, Root of Orris Florentina. It is aromatic and astringent. Used as a dentifrice.

Orthopnœ'a, Breathing in the upright position only, or with great difficulty.

Os, Latin for mouth; and also for bone. When Os means "mouth" the genitive case is oris, but Os a "bone" has ossis in the genitive. They can be distinguished by the connection in which they are used.

"Os uteri" is mouth of the uterus; "os innominatum" is the innominate bone.

Os'mazome, That which gives to meats, well cooked, their peculiar flavor.

Osmo'sis, Passing of liquids through animal membranes.

Os'sa, Bones. Plural of Os.

Os'sicles, Little bones. Bones of the ear.

Ostei'tis, Inflammation of bone.

Osteo'ma, A bony tumor.

Osteosarcoma, An inflammation, tumor, or abscess that involves both bone and flesh.

Osteot'omy, Cutting out of bone.

Otal'gia, Earache.

Oti'tis, Inflammation of the ear.

Otol'ogy, Study of the ear.

Otorrhœ'a, A discharge from the ear.

O'va, Eggs. Plural of Ovum.

Ovariot'omy, Removal of the ovaries by a surgical operation. Spaying.

O'viducts, Small tubes that convey the ovum to the uterus. The Fallopian tubes.

Ovip'arous, Egg-bearing, in distinction from animals that bring forth their young alive.

O'visac, The ovum in its capsule.

Ovula'tion, The ripening of ova, and their escape from the ovaries.

O'vule, The unimpregnated ovum.

Oxida'tion, The atomic combination of oxygen with any other element or substance.

Ox'ygen, An important chemical element. See Dutton's "Medical Notes".

Oxytoc'ic, An agent that stimulates uterine contractions.

Ozœ'na, A fœtid ulceration of the bones of the nose.

O'zone, Condensed oxygen.

P

Pabulum, Food.

Pack, A blanket or sheet wrung out of water and wrapped about the patient, then covered with dry blankets.

Pædiat'rics, Medical treatment of children.

Pal'ate, Roof of the mouth. It is partly osseous and partly membranous; or hard and soft.

Pal'lor, Paleness.

Palpa'tion, Act of feeling.

Palpita'tion, Unusual beating of the heart.

Palsy, Paralysis.

Panace'a, Cure-all. A universal remedy.

Pana'do, Bread softened in water.

Pan'creas, The sweetbread of animals. In man a large gland in the abdomen that secretes a colorless fluid for emulsifying oils and fats.

Papa'ver, Poppy, from which opium is made.

Pap'ule (papula, a pimple), A small abnormal elevation of the skin. If the pimple contains a clear fluid it is termed a vesicle; if it contains pus it is termed a pustule; if it is hard and contains a small mass of semi-solid granular matter it is termed a tubercle.

Paracente'sis, Tapping for the evacuation of fluid.

Par'affine, A white translucent substance obtained from coal tar. The word signifies "little affinity". It resembles white wax.

Paraglob'ulin, Same as Fibrinoplastin.

Paral'dehyde, A substance having the properties of chloral.

Paral'ysis, Palsy. Loss of power to move the affected parts. Also loss of sensation.

Paralyt'ic, Affected with paralysis.

Paraphimo'sis, Constriction of the prepuce behind the glans penis.

Paraple'gia, Paralysis of the lower half of the body. It occurs from injury of the cerebro-spinal axis. It involves paralysis of the rectum and bladder.

Par'asite, An organism, animal or vegetable, that feeds or lives upon another.

Parasit'icide, Something that kills parasites.

Paregor'ic, Camphorated Tincture of opium.

Paren'chyma, The essential part or substance of an organ, or of fruit.

Par'esis, Partial paralysis.

Pari'etal, Pertaining to a wall. The parietal layer of the pleura is that which lines the chest, while the visceral layer of the pleura covers the lung.

Parony'chia, A painful swelling and abscess upon the finger. Felon. Whitlow.

Par'oxysm, An exacerbation, or fit of a disease. A convulsion.

Partu'rient, In labor. Bringing forth.

Parturi'tion, Act of giving birth to young.

Par va'gum, "The wandering pair", applied to the Pneumogastric nerves (the tenth cranial).

Path'etism, A term for magnetic treatment.

Pathogen'esis, A subdivision of medicine that treats of the origin and developement of disease. Branch of Pathology. Pathog'eny.

Pathogen'ic, Taking part in producing disease.

Pathognomon'ic, Applied to a symptom of disease which is diagnostic; one that distinguishes the disease from all other forms of disease, like the pustules of small pox.

Patholog'ical, Pertaining to the study of disease.

Pathol'ogy, Study of disease as a whole.

Pec'toral, Relating to the breast (pectus).

Pectoril'oquy, "Speaking from the breast", as though the voice came directly from the chest. A peculiar resonance over pulmonary cavities made by the voice.

Ped'icle, A foot-stalk. The slender part by which a tumor, or morbid growth is often attached.

Pedic'ulus, or Little foot, Generic name for louse.

Pedilu'vium, A foot bath.

Pedun'cle, The foot-stalk of a plant. The name also of parts near the base of the brain. The restiform (rope form) bodies of the medulla pass upward on either side of the fourth ventricle of the brain and enter the cerebellum (back brain). These bodies from their position are termed the inferior peduncles of the cerebellum. The peduncles of the cerebrum are also called crura cerebri. (See Dutton's Illustrated Anatomy, p 290 and p 279.)

Pel'licle, A thin skin or film.

Pel'vis, Basin or basket of the hips that contains the urinary and genital organs.

Pe'nis, Male organ of generation.

Pep'sin, The essential element of the gastric juice. Digestor.

Pep'tones, Soluble albuminoids, made soluble by the gastric juice. Peptones pass readily through animal membranes but albuminoids do not.

Per, Latin preposition and prefix signifying through, or a high degree of.

Percep'tion, Act of receiving impressions or knowledge through the medium of the senses.

Percola'tion, Process of making a tincture or infusion by straining or passing liquids through a powdered mass in a long vessel, conical at the bottom for collecting the fluid.

Percus'sion, Act of striking upon the chest or abdomen for the purpose of ascertaining conditions by the resonance. It is usually done by placing two or three fingers of the left hand firmly over the part and tapping upon them, one at a time, with the index and middle finger of the right hand. Experience, first upon the sound or healthy body, is necessary to make percussion valuable in diagnosis.

Pericardi'tis, Inflammation of the pericardium, (heart-case.)

Pericra'nium, The dura mater, or periosteum of the cranium (skull).

Perimys'ium, The fascia or sheath that invests a muscle.

Perine'um, The floor of the pelvis.

Perineu'rium, The investing sheath of a nerve. The nerve is made up of funiculi, and the funiculi of nerve fibres. The investing membrane of the nerve fibre is called the primitive sheath, and that of the funiculi, the neurilemma.

Perios'teum, A tough membrane that closely invests the bone. It serves as an attachment for muscles.

Periosti'tis, Inflammation of the periosteum.

Peripatet'ic, "Walking about." Aristotle instructed his pupils while walking in the gardens or elsewhere.

Periph'ery, The outer boundary, or outer surface of any thing in distinction from the inner or central part.

Periscop'ic, Applied to a lens or eye glass that is concave on one surface and convex on the other, either surface having the shorter radius of curvature than the other so that the lens may refract more or less.

Peristal'sis, The peculiar movement of the intestine when carrying its contents forward. It is also called vermicular motion,

Peritone'um, A fibrous or serous membrane that lines the abdominal cavity and invests nearly all of the abdominal viscera.

Peritoni'tis, Inflammation of the peritoneum.

Perni'cious, Destructive. Sometimes applied to malignant fevers.

Pertus'sis, Whooping cough.

Pes'sary, An instrument devised to support the uterus, It is intended to be worn in the vagina.

Pete'chia, Spots on the skin like flea bites.

Phagede'na, The eating or corroding of an ulcer. The extension of gangrene and formation of sloughs.

Phalan'ges, Rows of bones that form the fingers and toes.

Phal'lus, The Greek name for penis.

Phan'tom, Model, or effigy used to illustrate bandaging, and other operations.

Pharm'acist, One who deals in poisons. A druggist.

Pharmacopœ'ia, Art of making poisons. A work containing formulæ for the selection and preparation of drugs and poisons used as medicines. It is generally published by authority and its preparations are said to be official.

Pharm'acy, Greek word for poisoning. Now applied to art of selecting, making and combining drugs and medicines.

Pharyn'geal, Relating to the throat (pharynx).

Pharyngi'tis, Inflammation of the throat.

Phenac'etine, One of the coal-tar products introduced some years ago for reducing pain and fever. It is by some authors considered more dangerous than antipyrine.

Phenol, Proper name for Carbolic acid.

Phenom'enon, Some unusual or wonderful appearance. The plural is phenomena.

Phimo'sis, Constriction of the prepuce so that the glans penis cannot be uncovered.

Phlebi'tis, Inflammation of a vein.

Phlebot'omy, Bloodletting. Venesection.

Phlegm, A viscid mucous secreted by an impaired or diseased mucous membrane.

Phlegma'sia, Old name for inflammation. Phlebitis with pain and swelling of the leg occurring after child-birth. Milk-leg.

Phleg'mon, A boil.

Phos'phate, Any salt of phosphoric acid.

Phos'phorus, An elementary substance found in bone, brain, and nerve-tissue.

Photopho'bia, Fear or dislike of light; a symptom of inflammatory condition of the eye.

Phrenop'athy, Mind cure. Also used for mental alienation.

Phthisis, Tuberculosis, or Consumption of the lungs. (See article on Consumption by the author.)

Phys'ic, The profession of medicine. A cathartic.

Phys'ical, Relating to nature and material things.

Physi'cian, One who practices medicine. A naturalist.

Phys'icist, A student of Physics.

Phys'ics, Natural science, or natural philosophy.

Phys'iology, Science of vital action.

Phytolac'ca, Garget root.

Piles, Hæmorrhoids. This difficulty may be described as congestion, distension, and inflammation of the hemorrhoidal veins at the lower part of the rectum. Its physical cause is the choking up of the portal circulation in the liver which prevents the ready return of blood from the veins of the rectum, Constipation, sedentary habits and the use of drastic purgatives are generally found accompanying. Great strains of mind or body may bring on or aggravate the trouble. The choking up of the liver is caused by an excess of sugar, butter, oils and fats in the food taken, and neglect, in some cases, of proper exercise of the muscles and body. Correct the diet and exercise; keep the bowels free by use of proper injections if necessary; anoint with some mild salve, like lanoline, and return the bunches that may form beyond the external sphincter muscle, into the bowel again; and remove all strain of mind or body. A belladonna, or opium and tannin suppository usually gives temporary relief. The other means mentioned effect permanent cures.

Pilocar'pine, An alkaloid from jaborandi. A powerful diaphoretic. Dose $\frac{1}{8}$ to $\frac{1}{4}$ of a grain. Efficient in dropsy and alopecia.

Pimen'ta, Allspice. Used to prevent the griping of purgatives.

Pink-root, Spigelia.

Pin'na, The external ear.

Pin-worm, Ascaris Vermicularis.

Pipette', "A little pipe." A graduated tube with a bulb terminating at a point. Used for removing small portions of a liquid drawn into the tube by suction.

Pipsis'sewa, Prince's Pine. Chimaphila.

Pit of the stomach, A part of the abdomen; it is situated in the region of the ensiform cartilage.

Pith'ing, A term applied by vivisectionists to the removal of the cerebral lobes of a frog or other animal for purpose of experiment. Braining.

Pityri'asis, A skin disease characterized by the appearance of branny scales. An application of Lanolin (wool-fat), improves the appearance of the skin.

Place'bo, "I will please." Some inert or mild substance given for mental effect only.

Placen'ta, The afterbirth or secundines. It is a spongy, vascular body, that adheres to the inner wall of the uterus during gestation, and forms the connecting link between mother and child. The child or fœtus is attached to the

placenta by means of the umbilical cord.

Plant'ar, Pertaining to the sole of the foot.

Plas'ma, Liquor Sanguinis. The fluid part of the blood.

Plas'ter, An adhesive medicinal substance spread upon cloth or some flexible material for application to external parts of the body.

Plas'tic, Capable of being formed or moulded. "Plastic operations" consist in engrafting of tissue or integument from an adjacent part.

Pleth'ora, Abnormal fulness of the blood vessels.

Pleu'ra, The serous membrane that envelopes the lung and lines the inner surface of the chest.

Pleu'risy, Inflammation of the pleura. Pleuritis.

Pleurodyn'ia, A rheumatic pain seated in the muscles of the chest or side.

Pleuro-pneumo'nia, Inflammation of both pleura and lung. It is said by some authors to be infective, and due to micro-organisms.

Pleurothot'onos, A form of tetanus when the body is bent to one side.

Plexim'eter, An ivory disc or other substance placed on the body to receive and communicate the blow in percussion.

Plex'us, A network. Applied to the meeting and crossing of several nerves.

Plum'bum, Lead.

Pneumo'nia, Lung fever. Inflammation of one or both lungs. Pneumonitis.

Podophyl'lum, Mandrake root. A cholagogue and purgative.

Poi'son, Any substance whose nature is injurious or destructive to health and physical manifestations of life. Something that cannot be taken into the body without physical injury. Food tends to support physical life; poison tends to destroy it.

Poi'soning, Act of administering any substance destructive of life and health.

Polar'ity, That property which causes the magnetic needle to turn to the plane of the magnetic meridian, and crystals to take definite shape. The poles of a battery are the ends of the wires that transmit the current of electricity.

Pol'y, A Greek word signifying much or many.

Polyclin'ic, "Many beds." A place where many patients are treated.

Polydip'sia, Much thirst.

Polyg'amy, Many marriages or wives.

Polyg'onum, Water pepper. Smartweed. Diuretic, emmenagogue, and aphrodisiac. Externally the juice is rubefacient and vesicant. Sometimes given for impotence.

Pol'ypus, A pedunculated tumor.

Pomade', Any perfumed ointment especially for the scalp.

Po'mum Ada'mi (Adam's apple), The prominence in the neck caused by the projection of the thyroid cartilage.

Por'tio du'ra (hard part), That part of the seventh cranial nerve (in Gray's Enumeration) that controls the muscles of expression. More commonly called facial nerve. The portio mollis, the remaining part of Gray's seventh and the eighth cranial of most other authors—is the auditory nerve.

Post-mor'tem, "After death." Usually applied to examination or autopsy of the dead body.

Post-par'tum, "After child-birth." Usually applied to hemorrhage occurring soon after child-birth.

Po'table, Fit for drinking.

Potas'sium, One of the metals. Has a powerful affinity for oxygen, decomposing water when thrown upon its surface and taking fire spontaneously. Its salts and oxides have been much used in medicine. It destroys the nerves and paralyzes the muscles. With the base of lime (calcium) caustic potassa forms the "Vienna Paste," which is powerfully escharotic; with water, potassium forms "Caustic Potash," and it is also an ingredient of the well-known "Seidlitz powder."

Pota'to spirit, Amyl(starch) alcohol, or fusel oil.

Poul'tice, A cataplasm. A soft moist substance for external application.

Pott's Disease, Caries of the spine producing curvature.

Pott's Fracture, Fracture of lower end of the fibula.

Pox, Plural of pock. Syphilis. Variola.

Præ, Latin preposition signifying before.

Præcor'dia, Before the heart.

Prævia (before the way, or in the way), Applied to the placenta when it lies before the head of the child, or over the mouth of the uterus.

Precip'itate, Anything thrown down or changed from a soluble to an insoluble form in a liquid.

Preg'nancy, Condition of being with child.

Pre'puce, Foreskin of the penis.

Presbyo'pia, Sight or vision of the old. Far-sightedness. The change usually occurs at about 50 years of age.

Prescrip'tion [written before], A paper, or formula written by the physician to the druggist, designating certain substances to be used by the patient, and giving directions for taking or using.

Presenta'tion, A term applied to designate the position of the fœtus in child-birth.

Prevert'ebral, In front of the vertebræ.

Pai'apism, Abnormal erection of the penis by reflex action.

Prickly Ash, Xanthoxylum. A stimulating bark much used by Botanic physicians.

Primip'ara, A woman bearing her first child.

Pro'bang, A rod with a sponge attached to one end for introduction into the throat, œsophagus, or larnyx.

Probe, A small metalic rod for examining or trying a wound or fistula.

Proc'ess, A projection, or eminence of bone.

Pro'drome, A forerunner of disease.

Profun'dus, Deep. Applied to deep-seated vessels.

Proglot'tides, Segments of the tapeworm.

Progno'sis, Foreknowledge of the progress and result of disease.

Prolap'sus, Falling down or protruding of some part, or organ, as of the uterus or bowel.

Prolifera'tion, Cell-genesis. Continued formation of cells.

Prona'tion, Turning the palm downward.

Prone, Palm or face downward.

Prophylac'tic, That which wards off disease.

Prophylax'is, Art of preventing sickness.

Pros'tate Gland, A gland surrounding the first portion of the urethra near the bladder.

Prostitu'tion, Selling or devoting the mind or body to a bad purpose for the sake of gain or hire.

Pro'teids, Albuminoids. Important constituents of food and of the body. They are nitrogenous principles.

Pro'toplasm, "First-formed." A term applied to the matter that forms the substance of the first cell of an organism. Bioplasm.

Prunus Virginian'a, This is the name usually given for the wild cherry but is really the black cherry. The wild cherry is the pin cherry or red cherry.

Puri'go, A kind of itch. Pruritus.

Pseu'do, False or seeming. Generally used as a prefix.

Pseu'do-membrane, False membrane. It occurs in croup and diptheria.

Pso'as, The loins, or relating to the region of the loins.

Pso'ra, Itch. Scabies.

Psori'asis, A form of Lepra. A skin disease.

Psy'chic, Pertaining to the soul.

Psychop'athy, Soul-cure or affection; according to some authors, disease of the mind.

Pteryg'ium, "Bat's wing." A fleshy substance that sometimes grows over the cornea in the angle (canthus) of the eye. It can be removed with the knife, or with some mild escharotic.

Pto'maines, Putrefactive, or cadaveric, alkaloids. Derived from a word signifying a corpse or dead body.

Pto'sis, Drooping of the upper eyelid, due to paralysis of the motor oculi nerve, or that part of it which controls the upper lid.

Pty'alin, The solvent element of saliva.

Pty'alism, Salivation. Excessive flow of saliva, which is often caused by the use of mercury. Mercurial poisoning.

Pu'berty, Of mature age.

Pu'bes, Front part of the pelvis.

Puden'dum, External female genital organs.

Pu'erile, Relating to childhood.

Puer'peral, Pertaining to childbirth.

Pul'monary, Pertaining to the lung or lungs.

Pulsatil'la, Pasque Flower. Meadow Anemone. A Homœpathic remedy for Amenorrhœa, Hysteria, and some other forms of disease. In large doses it produces nausea and paralysis. Dose of the tincture one minim, or less.

Pulse, The undulations of the arteries produced by the contractions of the left ventricle of the heart. The pulse is easily felt in the radial artery of the wrist.

Punc'tum (point), A Latin word.

Punc'ture, A wound made by a pointed instrument.

Pun'gent, Acrid. Producing a prickling sensation on the tongue.

Pu'pa, The second stage of being in insect life. The chrysalis. The first stage is the larva, and the third is the butterfly, or mature insect.

Pu'pil, The round aperture in the iris, sometimes called "the sight."

Purga'tion, Cleansing of the bowels, usually by use of some purgative, or cathartic medicine.

Pur'pura, Extravasation of blood in the skin. May be

due to a bruise, or to imperfect oxidation of the blood.

Pu'rulent, Containing pus.

Pus, The fluid product of an abscess.

Pus'tula Malig'na (malignant pustule), Anthrax; the Charbon of the French.

Pus'tule, A diminutive or little abscess.

Putrefac'tion, Act of rotting, or decay. The decay of organic matter in the body gives rise to several products.

Putres'cence, Becoming rotten.

Pu'trid, That which has undergone putrefactive fermentation. Offensive to sight and smell.

Pyæ'mia, Pus in the blood.

Pyelitis, Inflammation of the pelvis of the kidney.

Pylo'rus, The second orifice of the stomach.

Pyok'tanin, Methyl Violet. An analine dye used for staining bacteria. It has also been recommended as a germicide.

Pyret'ic, Pertaining to fever.

Pyrex'ia, Fever.

Pyr'iform, Pear-shaped.

Pyro'sis, An affection or fermentation of the stomach characterized by a burning sensation and accompanied by acrid eructations. Heartburn.

Pyrox'ylin, Gun cotton. Highly explosive by percussion. It is used in making collodion.

Pyu'ria, Pus in the urine. Pus is the product of destructive transformation of some part. It may arise from the kidney, bladder, prostate gland, urethra, or any portion of the urinary passages.

Q

Quack′ery, Pretension. Charlatanism in the practice of medicine. Boasting or pretending to skill not possessed.

Quadra′tus, Having four sides like a square.

Quad′riceps, Having four heads.

Quadru′mana, Having four hands; an order of mammalia, including apes, monkeys, the Orang Outang, and the Chimpanzee.

Quar′antine, Time of detention, or isolation sometimes required by law for an infected vessel before it is allowed to enter port.

Quar′tan, Intermittent fever returning on every fourth day, or once in three days.

Quas′sia, A Bitter bark or wood, used as a tonic.

Quin′ia, or quin′ine, An alkaloid from Peruvian bark, much used as a tonic, and also in fevers, especially intermittents. Dose of the sulphate 1 to 20 grains. This drug, though used of late in enormous quantities as a medicine must be regarded as a poison.

The following are some of the more prominent symptoms attending its use; dizziness, ringing in the ears, deafness, blindness, headache, nosebleed, eruptions upon the skin, depression of respiration, and paralysis of the heart. One author says that "severe epistaxis may ensue after so small a dose as 4 grains.

Quintes′sence, Thə concentrated essence, or concentrated active principle of any substance.

Quiz, A term used for questioning of medical students, for the purpose of fixing prominent points or ideas in the mind.

Quick′ening, Time when the movements of the fœtus first become perceptible to the pregnant woman.

Queen of the meadow, Eupatorium purpureum. It resembles "Boneset" but grows taller and has purple blossoms.

Queen's Root, Stillin'gia.

Quer'cus Alba, White oak. The bark is used as an astringent.

Quick'lime, Unslaked lime. Calcic oxide.

Quick'silver, Mercury. Hydrargyrum.

Quin'ism, The peculiar condition induced by use of quinine.

Quin'sy, Tonsilitis.

Quotid'ian, A fever returning daily; literally, as often as the day.

R

Rab'ies, Madness from the bite of an animal. Hydrophobia (fear of water).

Rac'emose, Like a bunch of grapes.

Rachi'tis, Rickets. Deformity of the spine from a deficiency of earthy matter in the bones.

Ra'dial, Pertaining to the radius, or outer bone of the forearm.

Rag'wort, Senicio. Life Root. Female Regulator. There are several varieties of Senicio.

Rale, [**a rattle,**] A French term for certain abnormal sounds heard in the lungs during respiration. The different varieties are the dry and moist rales. The latter are caused by the air passing through a liquid. The liquid may be phlegm, mucus, blood, or possibly serum. They are bubbling sounds. The principal moist rales are the mucus and crepitant. The latter may be due to the separation of agglutinated air cells in the lungs.

The principal dry rales are the sonorous and sibilant; the latter denoting a higher pitch, and is produced in the smaller tubes of the bronchial branches. The death-rattle is a mucous rale caused by mucus in the trachea.

Ra'mi, Plural of ramus [a branch].

Ramification, Separating into branches.

Ran'cid, A term applied to fats and oils that are no longer fresh. It signifies souring.

Rape, Compelling a woman to submit to sexual connection. Violation. A criminal action.

Rash, An eruption of the skin as in measles, scarlatina or small-pox.

Rats'bane, Rat poison. Arsenic.

Rec'tum, The lower part of the colon or large bowel.

Recur'rent, Running back.

Re'flex, Bent back. Applied to the motor impulse set up at a nerve center in response to a sensory impulse.

Refrig'erant, Cooling or reducing heat.

Reg'imen, Methodical rule.

Regurgita'tion, A flowing back.

Relapse', Falling back into disease again.

Rem'edy, Something useful in the cure of disease. A corrective.

Remit'tent, Applied to a fever that has periods of diminution without ceasing altogether.

Re'nal, Relating to the kidneys.

Ren'net, An infusion of the fourth stomach of a calf, used in making cheese to curdle the milk or "bring the curd."

Respira'tion, The act of filling the lungs with air to vitalize the blood and again discharging it together with such waste as may be eliminated by the lungs. Breathing. Artificial respiration consists in securing respiration by artificial means. Three methods are mentioned in medical books, Hall's, Howard's and Sylvester's. Hall turned the body alternately upon the side and face; Howard pressed upon the chest or ribs to expel the air and then allowed the pressure of the atmosphere to inflate the lung again; and Sylvester depended upon forcibly raising and lowering the arms upon the chest. [See Sylvester's method.]

Res'pirator, Something worn over the mouth and nose to strain or modify the air as it enters the lungs.

Resuscita'tion, Act of bringing to life, or restoring one apparently dead from drowning or asphyxia.

Retch, To strain as in vomiting.

Re'te, Latin word for net.

Ret'ina, The inner membrane of the eyeball upon which the optic nerve is distributed.

Retrover'sion, A turning backwards, applied especially to the fundus of the uterus.

Rhe'um, Rhubarb. In the genitive case it is rhei.

Rheum'atism, Pain and soreness of the muscles, or muscles and joints from presence of uric or lithic acid, and caused by fermentation in the stomach and bowels.

Rhini'tis, Inflammation of the mucous membrane of the nose

Rhus, Sumach.

Rhus Toxicoden'dron, Poison oak. A favorite homœopathic remedy. Often called "rhus tox."

Rick'ets, A term applied to a deformity of the spine caused by deficiency of earthy matter in the bones.

Rigor, A chill. Stiffness.

Rig'or mor'tis, Rigidity of the body that usually occurs a few hours after death.

Rochelle salts, (Called in France and Germany, "Seignette salts" from the name of its discoverer, Pierre Seignette, of Rochelle, France,) is a tartrate of potassium and sodium. It is a mild, cooling purgative in doses of ½ to one ounce, but in small and repeated doses is absorbed and renders the urine alkaline. For the latter purpose it is sometimes given in rheumatism. It is one of the ingredients of Seidlitz powders.

Rose'ola, An affection or eruption of the skin marked by a red hue.

Ring'worm, Herpes circinatus. Caused by fungous vegetation in the skin.

Rubefa'cient, Something which makes red, and when applied to the skin, reddens it.

Rube'ola, Measles. One of the major exanthemata.

Ru'bus, Blackberry. The root is astringent.

Rudimen'tary, Not fully developed.

Ru'ga, (a wrinkle), A term applied to folds of the vagina or stomach. Commonly used in the plural number, rugæ.

Ru'mex, Yellow Dock. Considered an alterative. The bark of the root is used in syrups.

Rup'ture, A breaking or laceration of some part of the body or a protrusion. Hernia.

S

Sab'ina, Savin. The tops of a plant sometimes used in medicine. It is an irritant to the stomach, and in large doses produces violent purging and vomiting.

Sa'crum, A bone forming the posterior wall of the pelvis.

Sage, Salvia. A garden plant.

Saint Anthony's Fire, Erysipelas.

Saint Vi'tus' Dance, Chorea.

Salic'ylate of So'dium, A remedy now much used in Allopathic practice for rheumatism. Dose, as usually given, 5 to 20 grains.

Salicyl'ic acid, Ortho-oxybenzoic acid. Antiseptic and anti-fermentative. It is extremely irritating to the mucous surface of the stomach and bowels.

Sa'line, Relating to salt or chloride of sodium.

Sali'va, Secretion of the salivary glands.

Saliva'tion, Ptyalism. Often produced by use of mercury.

Sal'ol, An antiseptic for local application.

Sal'pinx, A term applied to the Fallopian tube and also to the Eustachian.

Salt, Chloride of sodium, or sodium chloride, (Na Cl). In chemistry a salt is the union of a base with an acid.

Saltpe'tre, Nitrate of potassium.

Salt Rheum, Skin disease from excessive use of salt, mercury, or other mineral poison.

Salts, A popular name for Epsom salt.

Salu'brious, Healthful, or health-giving.

Sal'utary, Beneficial to the health.

Salve, A soft mixture to be applied by inunction.

Sal'via, Sage used in domestic practice.

Sambu'cus, Elder.

San'ative, Tending to health.

Sanator'ium, A health resort.

Sanguina'ria, Bloodroot. Considered a hepatic stimulant. Is escharotic. The tincture is cleansing to ulcers and old sores.

Sanguin'eous, Bloody.

Sa'nies, (Pronounced in three syllables.) A discharge of pus mixed with blood.

San'ity, Soundness of mind.

Santon'ica, Wormseed. Has been given as a remedy for stomach worms. It is an irritant and in large doses produces dilatation of the pupil and intoxication.

Saph'enous (manifest), Applied to the subcutaneous or superficial veins of the lower limbs.

Sa'po, Soap. Soda soaps are hard soaps; but potash soaps are soft soaps.

Sar'co, A prefix from the Greek signifying fleshy.

Sar'cocele, A flesh-like tumor.

Sarcolem'ma, A delicate membrane that surrounds the fibers of a muscle.

Sarco'ma, A tumor in the flesh.

Sar'cous, Fleshy.

Sarsaparil'la, The root of smilax. Has been much used in blood syrups. The dry root is useless.

Sas'safras, The root-bark of a tree or shrub. Is aromatic and stimulant.

Sat'urnine, Pertaining to lead; or to Saturn.

Sca'bies, Itch. Psora.

Scala (ladder), Applied to the canals in the cochlea.

Scald, Destruction of tissue by hot liquids.

Scalp, The covering of the cranium.

Scal'pel, A small knife used in surgery and in dissecting.

Scam'mony, A drastic cathartic.

Scarf skin, The cuticle, or epidermis.

Scar'ificator, An instrument containing a number of small lancets operated by a spring for making incisions in the skin before cupping.

Scarlati'na, Scarlet fever.

Scheele's Green, Arsenite of copper. Used in painting.

Schneide'rian membrane, The mucous membrane of the nose or nasal passages.

Sciat'ic, Contracted form of ischiatic.

Sciat'ica, Neuralgia of the sciatic nerve.

Scir'rhus, Stone cancer. A hard tumor.

Sclero'sis, A condition of hardening or induration.

Sclerot'ic, Hard or indurated. Applied to the outer or white coat of the eyeball.

Scorbu'tus, Scurvy.

Scrof'ula, Swine disease, characterized by tumors, ulcers and abscesses. May be caused by the excessive use of fat pork.

Scro'tum, Pouch containing the testicles.

Scru'ple, 20 grains in Apothecaries' weight. Some writers use sc. for scruple.

Scurf, Bran-like exfoliation of the skin, especially of the scalp.

Scur'vy, A condition caused by living for some length of time upon salted provisions, and especially salted meats.

Scutella'ria, Skull cap. A reputed nervine.

Scyb'ala, Fæcal matter hardened into lumps.

Sea-sickness, Nausea and vomiting caused in some persons by the motions of a vessel on the water.

Sea-tangle, Stem of a sea plant called Laminaria. When dried it is firm and hard, but when wet or moistened it swells out like a sponge and has been used for dilating an orifice or canal. The sea-tangle tent in the cervix uteri is not free from danger.

Seba'ceous, Pertaining to fat or suet,

Secre'tion, Act of separating from the blood, by means of certain organs, a fluid or semi-fluid substance peculiar to the organ. Also applied to the substance secreted; as bile, milk, tears, mucus, gastric juice, saliva, &c. These are all secretions.

Sec'tion, Division by cutting.

Sec'undines, The afterbirth.

Sed'ative, An agent that lowers functional activity.

Sed'entary, Occupied much in the sitting posture.

Sed'iment, That which on standing settles to the bottom of a vessel containing a liquid.

Seid'litz powder, The official name of this powder is "Pulvis Effervescens Compositus", or Compound Effervescing Powder. It is composed of Rochelle salt 120 grains and bicarbonate of sodium 40 grains done up in a blue paper, and 35 grains of tartaric acid done up in a white paper. The contents of each paper are dissolved separately in water, and the two solutions are then added one to the other when an active effervescence ensues. The whole is generally swallowed quickly while effervescing; but it is better to take smaller powders, say one-fourth of the above, or even one-fifth, and repeat if necessary. It is a cathartic,

Semeiol'ogy, Study of signs or symptoms.

Se'men, The fluid of the male that contains the fecundating principle.

Sem'i, A prefix from the Latin signifying one-half.

Semilu'nar, Resembling a half moon.

Senec'tus, Old age. A Latin word.

Sene'cio, Life root. Several varieties arə known. The Senicio Gracilis is known as Female Regulator.

Sen'ega, A root that grows in the Southern States and is considered a stimulant to the bronchial mucous membranes.

Seni'lis, Relating to old age. A Latin word.

Sen'na, Leaves of a species of cassia. It forms an ingredient of the Compound Liquorice Powder; of Black Draught; and of Senna Confection. The latter is known as "Tamar Indien", and "Tropical Fruit Laxative". For making these

preparations see United States Dispensatory. Senna is a purgative. It stains the urine red.

Senso'rium, The seat of sensation, or place where the soul resides.

Sen'sory, Pertaining to sensation.

Sep'tic, Relating to putrefaction.

Septicæ'mia, Blood poisoning by absorption of putrefactive matter.

Sep'tum, A division wall, formed usually of bone or membrane.

Seq'uela, or Seq'uelæ, The abnormal condition or conditions that sometimes follow the abatement of disease.

Seques'trum, A detached or dead piece of bone within an abscess or wound.

Serpenta'ria, Virginia snakeroot. The infusion or fluid extract has been used in typhoid conditions. Dose of the fluid extract, half a teaspoonful.

Se'rum, The yellowish fluid remaining after the coagulation of blood. It consists of the blood plasma minus the fibrin and blood corpuscles.

Ses'ame Oleum, A bland, nearly odorless oil, used for the hair. It keeps better than olive oil.

Ses'amoid, A term applied to small bones developed in the tendon of a muscle where it crosses a joint and is submitted to much friction or pressure. The kneepan is a sesamoid bone.

Se'ton, A strip of linen or cotton twist passed through the skin and subcutaneous tissues to keep up an issue. Not much employed at present.

Se'vum, Suet.

Sew'age, The excreta and waste of cities and towns mixed with water and discharged into rivers and harbors by means of drains.

Shin'gles, Herpes Zoster. A vesicular eruption that spreads round the body like a girdle.

Shock, Debility, paralysis, or loss of consciousness caused by some sudden blow or other injury to the mind or body.

Show, A proper term for the discharge of a sauguineous fluid from the birth-canal prior to delivery in childbirth.

Sin'apis, Mustard. Used as a rubefacient, and sometimes as an emetic.

Sin'apism, A mustard plaster.

Si'nus (gulf or bay), A term applied to a natural, bony cavity, a natural venous channel, or to an abnormal canal

discharging pus from an abscess which is seated upon the bone.

Si'phon, A bent tube having one leg longer than the other and used to transfer a liquid from one vessel to another. By this means the contents of a barrel or vessel may be made to flow out or over the top of the vessel without moving it,

Si'tus, Position. The natural position. A thing is "IN SITU", when it is in its natural position.

Sitz-bath, A hip bath, or half bath.

Ska'tol, A crystalline product of the putrefaction of fæces. It gives to fæces their peculiar disagreeable odor.

Sling, A swinging bandage for a fractured limb.

Slough, The dead part that separates from the body by process of mortification.

Sludge, Sewage-deposit.

Smart-weed, Polyg'onum. Water pepper. The leaves have a burning taste, and inflame the skin when rubbed upon it, and are esteemed diuretic.

Snakeroot, Black, Cimicifuga. It is also called Black Cohosh. It is considered a nerve sedative. Dose of the fluid extract 5 to 20 drops.

Social Evil, Prostitution.

Sociol'ogy, Study or science of social relations.

So'dium, A metal characterized by a strong affinity for oxygen.

So'dium bicar'bonate, "Baking Soda".

Sol'vent, A liquid capable of dissolving. Water is a solvent for very many substances; alcohol is a solvent for gums and resins, and chloroform is a solvent for fats.

Somnam'bulism, Sleep-walking.

Soporif'ic, An agent that produces sleep.

Sor'des, Filth. Applied to deposits on the teeth.

Sore, Painful to the touch.

Sound, Sensation produced by vibrations of air upon the membrana tympani. Also an instrument for exploring the bladder or uterus.

Spanish Fly, Cantharis, formerly much used for blistering.

Spasm, Convulsive muscular contraction.

Spat'ula, A flexible flat blade like a case knife used for spreading ointments.

Spay, To remove the ovaries.

Specif'ic, A medicine capable of curing some definite form of disease.

Specific gravity, The relative weight as compared with

some standard. The standard for all solids is pure water at its greatest density.

Speculum, An instrument for dilating and examining parts of the body usually concealed from view, like the vagina and rectum.

Spermatic, Relating to the semen.

Spermatorrhoe'a, An involuntary flow of semen without proper sexual relation.

Sphinc'ter, A muscle that surrounds and closes some orifice of the body like the mouth, eye, anus or vagina.

Spigel'ia, Pink root. May produce narcotic effects, and is therefore more or less dangerous.

Spinal cord, The nerve matter contained in the spinal canal and terminating in the cauda equina at the second lumbar vertebra.

Spine, The vertebral column. Also a thorn-like process of bone.

Spir'itus, Latin for spirit.

Spir'itus Frumen'ti, Whiskey. **Rectified spirit,** Spirit free from fusel oil and containing 85 per cent of alcohol.

Spir'itus Vi'ni Gal'lici, Brandy. Is distilled from wine.

Spirom'eter, An instrument that measures the quantity of air exhaled at one breath.

Splanch'nic, Relating to the viscera.

Spleen, One of the abdominal viscera. It lies upon the left side just below the diaphragm.

Spleni'tis, Inflammation of the spleen.

Splint, An application to a limb to keep fractured bones in place while healing.

Sponge, A soft porous natural substance that rapidly imbibes water.

Sporad'ic, Scattered, or scattering. Not epidemic.

Sprain, Excessive strain of muscle or tendon resulting sometimes in the rupture of small fibres or filaments of the tissue sprained.

Spray, A liquid blown into vapor or minute particles by a strong current of air or other power.

Spu'tum, The secretions of the mouth and respiratory passages ejected in the act of spitting.

Squa'lor, Filth.

Squa'mous, Scaly, or thin like scales.

Stam'ina, Vigor. Force. Also the plural number of stamen (filament and anther of a flower).

Stam'mer, To utter with hesitation after repeated attempts.

Staphylo'ma, A tumor of the eye, or bulging of the eye itself.

Sta'sis, Standing still or stoppage of the current of blood.

Sta'tus, Standing condition. Diathesis.

Stearop'tene, A crystalline substance dissolved in oil.

Steel, Pure iron to which has been added and incorporated a small percentage of carbon and manganese.

Steno'sis, Constriction or narrowing of vessels, ducts, or other passages at some place or part.

Stercora'ceous, Mixed with fæcal matter.

Ster'eoscope, An instrument that apparently converts two pictures of the same thing into one solid or life-like object. It is useful in exercising the eyes to correct strabismus, but is chiefly used for viewing pictures of landscapes, distant places, and other natural or artificial objects.

Ster'ile, Not fertile. Incapable of reproducing.

Ster'num, The breast bone to which the cartilages of the ribs are attached.

Ster'tor, Breathing as in snoring. It indicates more or less oppression of the brain.

Steth'oscope, An instrument for examining chest-sounds. It consists of a tube expanded at each end; or of two tubes, one for each ear, coming into one in the form of the letter Y.

Sthen'ic, Strong. Applied to fever as it appears in a strong, robust person. Asthenic signifies absence of strength.

Stig'ma, A mark or point. In pathology a red spot or blood stain in the skin. The plural is stigmata.

Stig'matism, A condition of the eye when the curvature and form of the eyeball and the refractive media of the eye are all perfect so that the rays of light from any point, near or far, are brought to a perfect focus upon the retina. Astig'matism is the absence of such a perfect condition of the eyeball.

Stilette', The part of the trocar which is enclosed by the canula. A small sharp pointed instrument.

Stillin'gia, Queen's Root. The compound fluid extract of stillingia is official and is a convenient remedy in scrofula. Its composition is given in the U. S. Dispensatory. See also Companion to the U. S. Pharmacopœia for formula.

Stim'ulant, An agent tending to excite increased action of the vital functions.

Sto'ma, Greek word for mouth. The plural of stoma is stomata.

Stomati'tis, Inflammation of the mouth.

Stool, Evacuation of the bowels; and also the fæces, or matter evacuated.

Strabis'mus, Squinting. Cross-eyed. It is due to incoordinate action of the external and internal rectus muscles of the eyeball. May be due to the habit of looking at an object too near the nose.

Straits of the pelvis, Planes of the inlet and outlet of the pelvis. They are called the upper and lower planes or straits.

Stramo'nium, Thorn apple. Datura Stramonium. Has the properties of belladonna, but is said to be more active. Is a narcotic poison.

Strangula'tion, Choking. Constriction.

Stran'gury, Painful urination. There is heat and pain at the neck of the bladder.

Stratum, Latin for layer.

Stretch'er, A cot or litter for carrying the sick or wounded.

Stri'a, Latin for streak or line. The plural is striæ, but the neuter plural of the adjective is striata. Corpora striata signifies striated bodies.

Stric'ture, A narrowing or contracting of a passage or canal by some external force or by inflammation. A supposed stricture may be only abnormal nervous action, or temporary muscular contraction.

Strid'ulous, Harsh or shrill,

Stroke, A sudden or instantaneous attack of disease; as of paralysis or apoplexy.

Stro'ma, Greek word for bed. The tissue forming the substratum or framework of an organ.

Stru'ma, Scrofula.

Strych'nia or Strych'nine, An extremely poisonous alkaloid from the seed of Strychnos or nux vomica. It causes when taken internally violent tetanic contractions of the muscles. Strange to tell, it is considered by the regular or dominant school of medicine, as a tonic.

Stupe, A fomentation.

Stu'por, Partial or complete insensibility.

Stye, A small boil or abscess upon the eyelid.

Styp'tic, An astringent that stops the bleeding from small vessels. Alum is a good styptic for cutaneous hemorrhage. Apply the pure alum.

Sty'rax, A balsam something like tolu in its action. Used

externally as an antiseptic and parasiticide.

Sty'rone, A liquid derived from styrax.

Subcrep'itant, A slight crackling noise or rale produced by the bubbling of air through mucus in the lungs.

Subsul'tus, Tremor or twitching of the muscles from deficient innervation.

Suc'cus, Latin for juice or sap. The fluid secretion of an organ.

Su'dor, Latin for sweat.

Suffoca'tion, Stifling. Arrest of respiration.

Sul'cus, A furrow or groove. The plural is sulci.

Sul'phide, A combination of an element with sulphur.

Sulph'onal, A modern hypnotic in doses of 20 to 30 grains. Di-ethyl-sulphon-di-methyl-methane is the chemical name.

Sul'phur, Brimstone. Laxative and diaphoretic. Tends when taken internally to cause anæmia and emaciation. Sublimed sulphur, unless washed is liable to contain traces of sulphuric acid and arsenical compounds. Water with a little water of ammonia is used for washing sulphur.

Sumbul, Musk root. Used in Russia as a nerve-tonic, and sometimes in this country as a substitute for musk in some affections.

Superfœta'tion, A second impregnation taking place during pregnancy. Not common, if indeed it ever occurs.

Superna'tant, Swimming, or floating upon a liquid.

Supina'tion, Turning the palm upward.

Supine', Lying on the back.

Suppos'itory, A solid medicine in the form of a cone and intended to be introduced into the rectum or vagina.

Suppura'tion, Formation of pus.

Sur'feit, Excessive fulness. Excess of food, or drink.

Sur'gery, A contraction of chirurgery. Literally handwork. The practice of medicine requiring more or less instrumental use and mechanical appliances.

Su'ture, A seam. The term is applied chiefly to the marginal union of the cranial bones, and also to the coaptation of the lips or edges of a wound by sewing.

Svap'nia, Denarcotized opium.

Swedish, System, Ling's Movement Cure.

Swoon, Syncope. Fainting.

Syco'ma, An excresence on the soft parts and supposed to resemble a fig.

Sylvester's method of artificial respiration, This method consists chiefly in forcibly moving the arms of the

patient so as to produce alternate expansion and contraction of the chest; in other words, to forcibly drive out from the lungs, by compression upon the chest walls. the respired air and then immediately allow the lungs to fill again, and repeating the operation fifteen or twenty times a minute for at least eight hours if necessary, or until the respiration is sustained naturally. Artificial respiration with proper artificial heat is the only reliable remedy in asphyxia and opium narcosis.

Syme's Operation, Amputation at the ankle-joint even or on the same plane with the upper surface of the astragalus.

Sym'physis, The joint, or line of union of the two symmetrical bones in the median line of the body, as of the chin and pubes. The term implies growing together.

Syn'chronous, Occurring at the same point of time.

Syn'ochus, Continuous. A term formerly applied to a continuous or continued fever.

Syno'via, The lubricating fluid of a joint. It is secreted by a synovial membrane, lining or covering the joint. The term signifies "with an egg," as though the joint was lubricated with the white of an egg, which resembles the joint fluid.

Synovi'tis, Inflammation of the synovial membrane.

Syn'thesis, Putting together. A chemical term for uniting or putting together of elements to form compounds.

Syph'ilis, Pox. Venereal disease.

Syr'inge, A pipe, tube, or instrument for injecting liquids into canals, passages, and cavities of the body. The fountain syringe is a useful instrument. Care should be used to have the air expelled from the pipe or instrument before introducing, since air thrown into the bowels, uterus, or veins, may cause pain. and even death, especially when using the hypodermic syringe.

Syrup, A saturated solution of sugar chiefly used to render medicines palatable. Simple syrup contains 65 per cent of white sugar and 35 per cent of pure or distilled water.

Sys'temic, Pertaining to the whole system.

Sys'tole, Contraction. Applied to the heart or arteries

Tab'acum, Tobacco.

Ta'bes, A wasting, or consuming.

Ta'bes Dor'salis, (wasting of the back), Locomotor Ataxia (or Ataxy). This disease is ascribed to atrophy and degeneration of the nerve-fibers of the posterior columns of the spinal cord from the lumbar region to the base of the brain. The principal symptoms are unsteadiness of gait, disorders of vision, insensibility of the cutaneous nerves, and abolition of the reflex action from the ligamentum patellæ.

Tac'tile, Relating to touch.

Tæ'nia, Greek for ribbon.

Tæ'nia So'lium, Tapeworm. A parasite that sometimes developes in the intestine of man from the Cysticercus. It is said to arise from eating of measly pork.

Talc, A silicate of magnesium.

Tal'ipes, Club-foot. If the patient walks upon the toes, it is called Talipes Equinus; if upon the heel, Talipes Calcaneus; if the foot is turned outward, Talipes Valgus; and when inward, Talipes Varus.

Tam'arind, A fruit with laxative properties.

Tam'pon, Cotton or other materials used to plug the vagina, or nose in cases of hemorrhage.

Tan'nin, or tannic acid, The active principle of vegetable astringents, especially hemlock and oak bark. It is a very light, yellowish white powder.

Tan'sy, An herb sometimes used in domestic practice in cases of suppressed menstration.

Tape'worm, Tænia Solium.

Tapio'ca, An excellent food when starch is needed.

Tap'ping, An operation for drawing off the serum or water in dropsy of the abdomen. It is technically called Paracentesis.

Taran'tula, A species of large spider whose bite is poisonous.

Tarax'acum, Dandelion. The tops are used for greens, and the root is considered medicinal. Said to be tonic, diuretic and aperient. Is used mostly in Botanic and Eclectic practice.

Tar'sus, The instep. or bones of the instep. Also a cartilage in the eyelid.

Tar'tar (infernal, horrid), A term sometimes applied to sordes on the teeth. Cream of tartar is the acid tartrate of potassium. Tartar emetic is a preparation of antimony.

Taurochol'ic acid, One of the ingredients of the bile.

Tax'idermy, Preparing or stuffing the skins of animals for preservation.

Tax'is, Process of arranging. Applied to the manual operation for reduction of hernia.

Tea, An infusion especially of the leaves of a Chinese plant. Its properties are due to theine, a substance said to be identical with caffeine. Chinese tea is considered a cerebral stimulant.

Technol'ogy, Science or study of the arts.

Teeth, Plural of tooth. Hard bodies resembling bone, firmly set in the alveoli of the jaws, and used as instruments of mastication; also for the purpose of articulation in speech.

Tenac'ulum, An instrument used in surgery and dissections for holding divided parts and vessels.

Ten'don, The fibrous cord that connects a muscle with the bone or with some distant part.

Tenes'mus, Straining at stool with rectal pain.

Tenot'omy, Cutting or division of a tendon.

Ten'sion, In physiology the strain or pressure to which an organ or vessel is subjected.

Ten'sor, Stretcher. A muscle that stretches or tightens some organ or part.

Tent, An instrument made of compressed sponge, sea tangle, or other substance that will swell or increase in size by absorption of water or moisture, and sometimes used to dilate passages like the cervix uteri. Their use is not free from danger.

Tento'rium, A fold of dura mater that covers the upper surface of the cerebellum and supports the posterior lobes of the cerebrum.

Ter'ra, Latin for earth.

Tepida'rium, A place or room for giving warm baths.

Ter'rian Cure, Mountain-climbing and dietetics as a natural cure for incipient phthisis, corpulence, etc,

Ter'tian, (From Latin, "tertius," third.) A form or variety of intermittent fever which returns every third day, or once in two days.

Tes'tes, The male glands that secrete semen. The testicles.

Testi'tis, Orchitis, or inflammation of the testicles.

Tet'anus, (From a Greek word signifying to stretch). A tonic spasm or continuous contraction of the muscles. It includes Trismus, Opisthotonos, Emprosthotonos and Pleurothotonos.

Tet'ter, An Anglo-Saxon word signifying foul. Tetter, Lichen and Herpes are equivalent terms.

The'nar, The palm of the hand or sole of the foot.

Theobro'mæ O'leum, Butter of Cacao. Oil of the seed of the chocolate tree. Used in making suppositories.

Therapeu'tics, Application of remedies for the cure of disease.

Theri'aca, Molasses. Treacle.

Ther'mal, Pertaining to heat.

Thermom'eter, Heat measurer, consisting of a glass tube and bulb containing mercury, and graduated to mark the degree of heat manifested by the expansion and rise of the mercury. The Centigrade thermometer has 100 degrees between the freezing and boiling points, while that of Fahrenheit has 180 degrees between the same two points; consequently one degree of Centigrade is equal to one and eight-tenths degrees of Fahrenheit.

On Centigrade the freezing point is marked zero (0), but on Fahrenheit the same degree (freezing point of water) is marked 32, i. e., zero on Fah. is 32 below the freezing point.

To change the registration from Fah. to C. subtract 32 and then divide by one and eight-tenths in the form of a decimal thus, 1.8. As an example take the temperature of the blood 98.6, on Fah., subtract 32 and we have 66.6, and dividing by 1.8 we have 37 C. Hence 98.6. Fah. equals 37. C. To reverse it, multiply by 1.8 and add 32. 37x1.8 plus 32 equals 98.6.

The'sis, A proposition laid down to be defended. An essay.

Thigh, All that part of the lower extremity that is above the knee.

Thoracente'sis, Piercing of the chest.

Thorac'ic, Pertaining to the chest.

Tho'rax, That part of the trunk containing the heart and lungs which lies above the diaphragm or midriff.

Thoroughwort, Boneset or Eupatorium perfoliatum. A domestic remedy.

Thrombo'sis, Formation of a clot in a blood vessel or in the heart.

Throm'bus, A clot formed in a vessel and remaining at the point of formation. If carried forward in an artery till it plugs the vessel it becomes an embolus, or plug.

Thrush, Sore mouth. Aphthæ.

Thu'ja, Arbor Vitæ. The fresh twigs have been used as a stimulant application.

Thyme, The oil of Thyme is used externally in solution or ointment as a powerful antiseptic.

Thymol, Oil of Thyme, rarely used internally.

Thy'mus, A small glandular body in the anterior mediastinum near the base of the neck. (See Dutton's Anatomy p. 392).

Thy'roid, Door-like, or shield-like, Applied to an artery, a cartilage, a gland, and a foramen in the body. (See Dutton's Anatomy).

Tic Douloureux', Facial neuralgia.

Tig'lii O'leum, Croton oil. A powerful irritant producing when applied to the skin, pustular eruptions. Internally a powerful drastic cathartic in doses of one minim. It is rarely given.

Tinct'ure, An alcoholic infusion. Usually made with diluted alcohol.

Tin'ea, A kind of worm. Applied to a class of skin diseases, or more properly forms of skin disease, and due to fungi. Ringworm is a form of Tinea.

Tin'nitus, Any tinkling sound.

Tin'nitus Au'rium, A ringing sound sometimes heard in the ear.

Tis'sue, Any web-like structure.

Tocol'ogy, Science of reproduction.

Ton'ic, An agent supposed to give tone to the system.

Ton'sil, A glandular body situated in the isthmus faucium close to the carotid artery. There is one on each side of the isthmus. Also applied to parts of the brain which resemble the tonsils in form.

Tonsilli'tis, Inflammation of the tonsils. Also called Quinsy.

Tonsilot'omy, Cutting out of the tonsils. There is danger of hemorrhage not only from the tonsilar artery but from the carotid which lies in close proximity to the tonsil; and there may be an abnormal distribution of the artery. It is stated that Elsburg made the operation 11,000 times. The reduction of albuminous food in the diet may obviate the necessity of an operation, as the enlarged tonsil is sometimes fibrous.

Tophus (plural Tophi), Hard concretionary matter that forms around the joints or on the teeth. Greek word.

Tor'mina, Griping pain in the bowels.

Tor'por, Benumbed condition.

Tor'sion, Twisting. Applied to the twisting of a severed artery to arrest hemorrhage.

Torticollis, Wry-neck.

Tour'niquet, (Pro. turneket). An instrument for compressing an artery in the arm or leg. It consists of a bandage tightened by means of a screw.

Toxicol'ogy, Treatise or study of poisons.

Tra'chea, The windpipe.

Tracheot'omy, Incision or opening of the trachea by use of the knife.

Trailing Arbu'tus, May flower. Sometimes given as a diuretic.

Trance, A condition in which the mind becomes more or less disconnected or absent from the body. Catalepsy.

Transfu'sion, A pouring out of blood or other liquid to be injected into the veins of a patient.

Transuda'tion, Sweating. Oozing of any liquid through the pores of the skin. The transudation of blood sometimes takes place.

Traumat'ic, Relating to a wound or injury.

Tre'mor, An involuntary trembling or shaking of the body or some part of it.

Trephine', An instrument for cutting out a circular piece of the skull. A round saw with a stilus or point at the center to hold it in place.

Tri'ceps, A muscle with three heads.

Trichi'na, A small round worm that infests pork. The plural is Trichinæ.

Tricus'pid, Three-pointed. Applied to the valve in the right side of the heart.

Tris'mus, Gnashing. Applied to what is more commonly called lockjaw. Tetanus of the temporal muscles.

Trisplanch'nic, Three-visceral. Applied to the system of sympathetic nerves that gives off three pairs of nerves to the abdominal viscera.

Trit'uration, Act of rubbing or grinding in a mortar. Also the substance triturated. There is at present only one official trituration—that of elaterine. It is triturated with milk sugar.

Tro'car, An instrument for tapping in dropsy of the abdomen. It consists of a style or perforator and a tube or canula. It is now superseeded by the aspirator.

Trochan'ter, A name applied to two large processes at the upper end of the femur. The greater that can be felt at the hip is called Trochanter major; the other Trochanter minor.

Tro'che [ch pronounced like k], Another name for tablet, or lozenge. There are 16 official troches in the United States Pharmacopœia.

Trunk, The body deprived of the head and limbs, also the main stem of a nerve or vessel.

Truss, An instrument to be worn in case of hernia.

Tryp'sin, This word signifies "friction." It is another name for pancreatin, a substance found in pancreatic juice. The latter dissolves or emulsifies fats.

Tu'bercle, A small root-stalk. Applied to a small process of bone upon the tibia near the knee in front; and in pathology to a small mass of granular matter found in various parts of the body

Tuberculo'sis, Affected with tubercle. Another name for consumption or phthisis.

Tully's powder, Compound morphine powder. It contains camphor, licorice, carbonate of calcium and sulphate of morphine. (See companion of U. S. P).

Tumefaction, Swelling or enlargement.

Tu'mor, A swelling or bunch of abnormal growth. A cancer when it forms a bunch is a malignant tumor.

Tu'nica, A coat or covering. The tunica albuginea, or white coat, and tunica vaginalis, or sheath-covering, form two coverings of the testicle. The tunica vaginalis is a serous membrane consisting of two layers—a visceral and parietal layer—and is the seat of hydrocele in dropsy of the scrotum.

Tussis, A cough.

Tympani'tes, Distention of the abdominal walls with gases. "Drum-belly."

Tympanitic, Giving a drum-like sound.

Tym'panum, The drum, or middle ear. This is a cavity within the petrous portion of the temporal bone. It contains the ossicles.

Typhli'tis, Inflammation of the cæcum.

Typhoid Fever, A fever resembling Typhus. (See work on Practice).

Typhus Fever, A fever characterized by more or less stupor and delirum.

Ty'rosin, A decomposition product of proteids.

U

Ulcer, Death of tissue upon a free surface.

Ulcera'tion, Molecular death and formation of ulcers.

Ul'mus, Slippery elm. Demulcent and emollient.

Ul'na, Bone of the forearm on the side of the little finger.

Ul'nar, Pertaining to the ulna.

Umbil'icus, That part of the abdominal wall in front which gave passage to the cord connecting the child with the placenta. The navel.

Un'dulato'ry, Wave-like motion.

Un'guent, and in Latin unguentum, Ointment. There are 26 official ointments. Vaseline and lanolin are now much used as ointments.

U'pas, A poisonous tree of the East Indies. It is thought to be identical with strychnia.

U'rachus, A cord which connects the summit or apex of the urinary bladder with the umbilicus.

Uræ'mia, Impregnation of the blood with urea.

Ure'a, The nitrogenous waste from the tissues that is secreted by the kidneys. It is held in solution in the water discharged.

The chemical formula is H_4N_2CO. or $CO(NH_2)_2$. It contains, as may be noticed the four essential elements of organic bodies. The decomposition of urea gives rise to uric, or lithic acid, which is almost wholly insoluble in water, requiring 1900 parts of boiling water to dissolve it, and uric acid gives rise to rheumatism, gravel and calculus.

United with soda, uric acid gives rise to gout. To test for urea, evaporate the urine to a syrupy consistence and add nitric acid to form nitrate of urea which will appear as a crystalline precipitate of rhombic plates.

The quantity of urea may be estimated by several methods. Fowler's or Liebig's are well known by chemists. 300 to 500 grains of urea are excreted daily.

U'reter, Urinary canal from the kidneys to the bladder, on either side of the body.

Ure'thra, Urinary canal from the bladder outwards. In the male it is divided into three portions, prostatic, membranous and spongy.

Urethri'tis, Inflammation of the urethra. "Clap." Improperly called Gonorrhœa.

U'ric acid (Formula $C_5H_4N_4O_3$), An acid often found in the urine of carnivora (flesh-eating animals). It is coming to be considered the immediate cause of many forms of disease, pain of the joints and muscles, headache, gravel, &c. Same as lithic acid. Many authors hold that uric acid is a normal constituent of the urine, and one author fixes the normal ratio of uric acid to urea at 1 to 33; i. e., there is one grain of uric acid to every 33 grains of urea and that if this proportional amount of uric acid is not secreted and thrown off daily, that it will accumulate in the blood and tissues and cause disease. We do not consider uric acid a normal product at all, but always abnormal. It is rarely found in herbivora.

U'rinal, A vessel for receiving the urine as it leaves the body.

U'rine, Secretion of the kidneys. Its pecific gravity in health varies from 1005 to 1020. Sugar in the urine increases its gravity. The urine of carnivora is generally acid; of herbivora alkaline.

Urinom'eter, A hydrometer used specially for the urine. It is a glass tube and bulb that floats in the liquid and the specific gravity is read at the surface of the liquid on the tube.

Urtica'ria, A transient eruption of the skin, elevated into wheals, that sting and itch. In Scotland it is called Hives. It is caused by eating shell fish, old cheese and other acrid matters that clog and poison the blood. A warm bath followed by the application of dilute vinegar relieves the itching.

U'terine, Relating to the uterus, or womb.

U'va Ur'si, Bearberry. Is diuretic.

U'vula, A pendulous body at the posterior margin of the soft palate in the median line. It is sometimes but improperly, called the palate.

V

Vacci'na, or vaccinia, Cow-pox or kine pox. It is small pox taken from a variolous cow.

Vaccina'tion, Inoculating for cow-pox.

Vagi'na, Latin for sheath. It is the musculo-membranous canal, or birth canal, extending from the vulva to the neck of the uterus.

Va'gus, The wanderer. Applied to the Pneumogastric nerve on account of its wide distribution. The plural is vagi.

Vale'rian, The root of a plant. Has been used as a nervine, or nervous depressant. In large doses it produces nausea and vomiting. Dose of the fluid extract 10 to 30 drops.

Valve, A folding door. A membrane or lid that permits passage in one direction only. The heart and blood vessels contain valves.

Vanil'la, The fruit of a climbing shrub found in the tropics. It excites the brain and prevents sleep. Is used mostly for flavoring and in perfumery.

Vapor, The aeriform state of a substance which at ordinary temperatures is a liquid.

Varicel'la, Chicken-pox. Probably a form or variety of Small-pox.

Var'icocele, Dilatation of the veins of the scrotum, or of the spermatic cord.

Var'icose, A term applied to enlarged veins.

Variola, Small-pox. An infectious disease characterized by fever and pustular eruptions upon the skin and mucous membranes. Its period of incubation is about 13 days, or 10 to 14. When the pustules are numerous and run together it is called Confluent Small-pox; if the pustules are distinct, Concrete Small-pox.

Varioloid', A term applied to designate small-pox when it occurs in a person who has had cow-pox; in other words it is a term used by the profession to conceal the fact that cow-pox is not a preventive of small-pox as many supposed.

Vari'olous,Pertaining to small-pox.

Vas'cular, Having blood vessels.

Vas'eline, Petrolatum. A substance derived from coal-tar. It does not become rancid like fixed oils and fats, and is used as an ointment for sores and skin affections.

Va'so-motor, Vessel-moving. Applied to nerves that control the circulation.

Vegeta'rian, One who discards fish, flesh and fowl—the three f's—as articles of food.

Vein, A blood vessel that carries blood to or towards one of the auricles of the heart.

Ve'na, Latin for vein. The plural is venæ.

Vene'real, Relating to Venus. Applied to disease of the sexual organs.

Venesec'tion, Vein-cutting. Bloodletting.

Ven'om, The poison of reptiles and serpents.

Ven'ter, The belly. Used also to designate the fleshy part of a muscle.

Ventila'tion, Exchange of air between animals and plants; or exchange of vitiated air for freshly oxidixed air. In ventilating rooms it is necessary to remember that expired air is heavier than atmospheric air and must be carried off at some point at or below the heads of the occupants of the room. Ordinary heated air will ascend because it is rarefied and lighter, but carbon dioxide (CO_2) from the lungs falls in any ordinary atmosphere because it has greater specfiic gravity.

Ventri'cle, A little cavity. Applied to two cavities of the heart, and five of the brain. (See Anatomy.)

Vera'trum vir'ide, American Hellebore. It depresses the heart's action and tends to paralyze the spinal cord. Must not be confounded with Phytolacca Decandra (Garget). Both have been called poke-root.

Verbas'cum, Mullein. The leaves are emolient, demulcent, and slightly anodyne. The tea or infusion has been used in pulmonary affections.

Vermicel'li, An Italian paste in the form of small rolls used in making soups. It contains flour, cheese and egg.

Verm'icide, Worm-slayer. Various agents have been used to kill intestinal worms, but as a general thing the remedy, especially calomel, has done more injury than the worms. The only sensible way to get rid of worms is to get rid of the foul and decomposing matters in which they breed.

Vermic'ular, Relating to worms. Applied to the peristaltic motion of the intestine.

Verm'iform, Having the form of a worm. Applied to a small tubular projection from the cæcum.

Ver'mifuge, Has the same meaning in medicine as vermicide, but is of different derivation. Worm-expeller.

Ver'tebra, One of the 24 bones that compose the backbone or spinal column.

Vertebra'ta, A class of animals including all those that have a spinal column.

Vertex, The upper region of the skull.

Ver'tical, A line which crosses the horizontal at right angles. Directly upward, or outward from the center of the earth.

Ver'tigo, Dizziness due to some oppression of the brain.

Ves'ical, Relating to the urinary bladder, or to a small blister.

Vesic'ular, Pertaining to vesicles.

Vessel, A carrier. Applied to arteries and veins that carry blood; and to the small tubes that carry lymph and chyle.

Vet'erinary, Pertaining to animals, and generally domestic animals.

Vi'able, Able to live.

Vibur'num prunifo'lium, Black Haw. A nerve tonic.

Vibur'num op'ulus, Cramp bark. Antispasmodic.

Vica'rious, Acting in place of another.

Vien'na, paste, A powerful escharotic made of caustic potassa and quicklime, 3 and 4 parts respectively. To reduce the powder to a paste use a little alcohol.

Vi'num, Latin for wine. The fermented juice of fruits. Wines contain alcohol, sugar, tannin, fruit acids and ethers.

Virginia Snakeroot, Serpentaria.

Viril'ity, Mature manhood.

Vir'ulent, Containing poison. Poisonous.

Vis, Force or energy.

Vis'cera, Internal organs of the body, occupying the three great cavities. By some confined to the contents of the abdomen. The singular is viscus.

Vis'ceral, Relating to the viscera.

Vis'cous, Ropy, sticky.

Vi'ta, Latin for life.

Vi'tals, The organs essential to life, brain, heart and lungs more especially.

Vitel'lus, Yolk of an egg.

Vit'reous, Glass-like, hyaline.

Vit'riol, An indefinite term when used alone. Blue Vitriol is blue stone or copper sulphate, Green Vitriol is copperas; White Vitriol is zinc sulphate; and oil of vitriol is sulphuric acid (H_2SO_4)

Vivip'arous, Applied to animals that bring forth their young alive.

Vivisec'tion, Cutting up animals while yet alive for experimentation.

Volsel'la, Forceps for removing foreign bodies from the throat.

Volt, The unit of electro-motor force; the force sufficient to cause a current of one ampere to flow against a resistence of one ohm.

Volume, In natural philosophy the amount of space which a substance fills.

Vo'mer, The plate of bone which helps to separate the two nasal cavities from each other.

Vom'it, To expel from the stomach.

Vom'itus, Vomited matters.

Vul'va, The external female genital organs.

W

Wart, A small excrescence at the surface of the skin.

Water Glass, A solution of silicate of sodium. Used in preparing surgical dressings.

Wean, To cease to nurse the infant at the breast.

Weight, The force of the earth's attraction. Gravity. The apparent weight is the weight in air; the absolute weight is the weight in vacuo, and the specific weight is the relative weight as compared with the same volume of some other substance.

Wen, A small tumor or sebaceous cyst, usually on the scalp.

Wet-nurse, A nurse who suckles the infant.

Wet-pack, Wrapping a patient in a wet sheet and covering with dry blankets.

Whey, The liquid part of milk separated from the curd, or casein.

Whitlow, See Paronychia.

Wine Gallon, 231 cubic inches.

Wintergreen, Gaultheria. Much used for flavoring medicines.

Womb, The uterus, or organ that contains the fœtus during gestation.

Woora'ra, Curare. A poison used in South America as an arrow poison, and in laboratories to paralyze the motor nerves and voluntary muscles of animals undergoing experimentation.

Worm'ian Bones, Extra or Supernumerary bones of the skull formed by separate centers of ossification; for instance, the parietal bone instead of one piece as usual, may be formed of two unequal pieces with a suture between them. The small piece is called a Wormian bone.

Wound, A break, tear, or other injury to the soft parts of the body by mechanical violence.

Wrist-drop, Paralysis of the muscles of the forearm often attending lead-poisoning.

X

Xan'thine, A leucomaine included in the uric acid group.

Xanthox'ylum, Prickly Ash. The bark and berries have been used as a stimulant.

Y

Yar'row, Achilies millefolium. A domestic vegetable aromatic tonic. The infusion may be used ad libitum.

Yeast, A substance used for raising bread and containing a plant known as the Torula cerevisiæ.

Y-Ligament, The Ilio-femoral ligament; one of the five ligaments of thc hip joint.

Z

Ze'ro, A cypher or character denoting the absence of quantity. On the Centigrade thermometer zero marks the freezing point of water. On Fahrenheit, it is 32 deg. below the freezing point.

Zin'giber, Ginger. Stimulant and carminative.

Zone or Ligament of Zinn, The ciliary zone, or suspensory ligament of the crystalline lens.

Zool'ogy, Science of animal life.

Zo'ophyte, An animal found in the sea and resembling plants externally—A low form of life.

Zygo'ma, An arch or yoke. Applied to the arch at the side of the head beneath which plays the temporal muscle in moving the lower jaw. It is also called the zygomatic arch.

Zymo'sis, Fermentation, or condition of fermentation.

Zymot'ic, Pertaining to fermentation. All forms of disease arising from fermentation in the system are zymotic. They include Small pox, Measles, Scarlatina, Typhoid Fever, Erysipelas, Diptheria, Rheumatism and probably others.

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