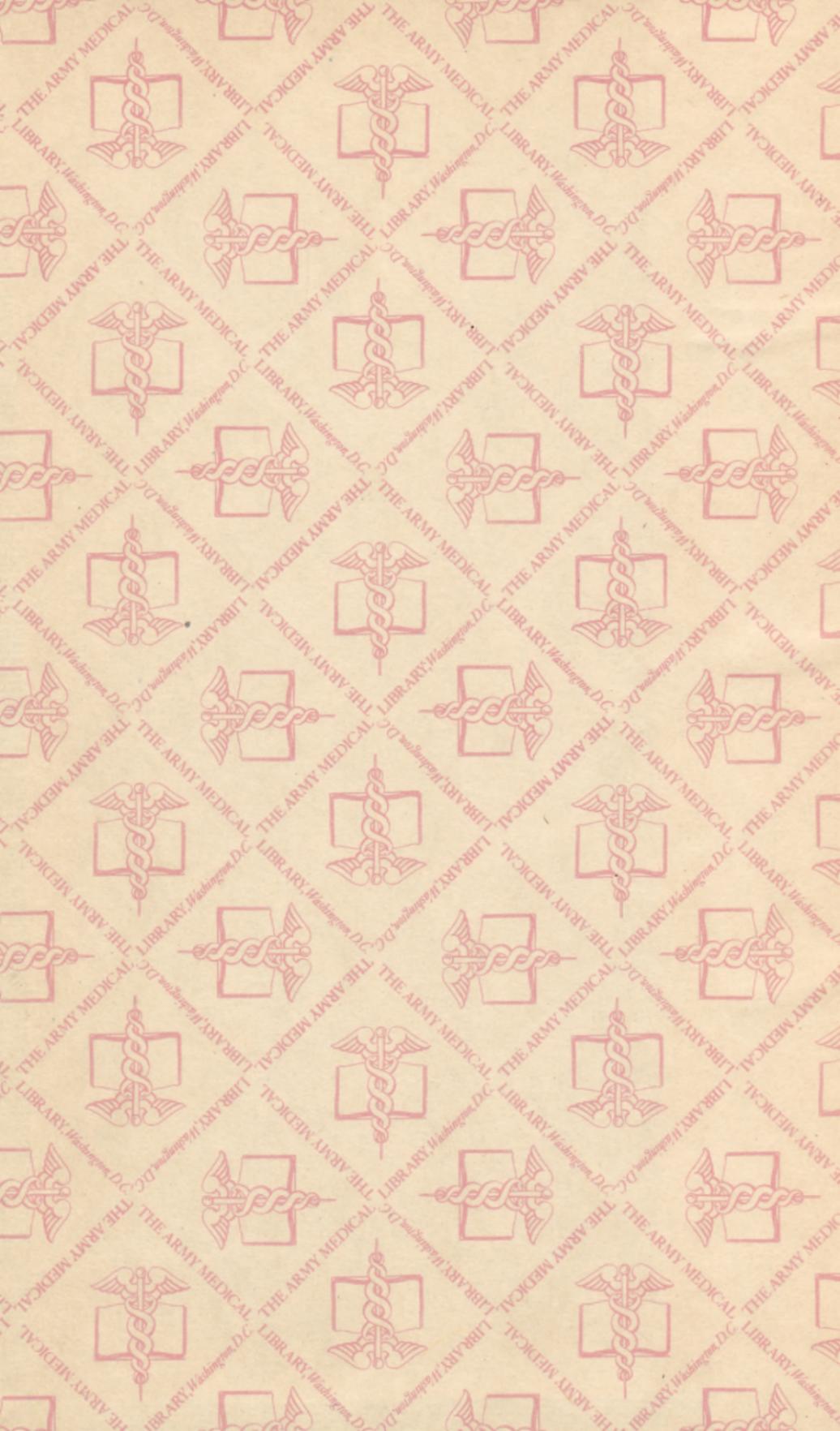
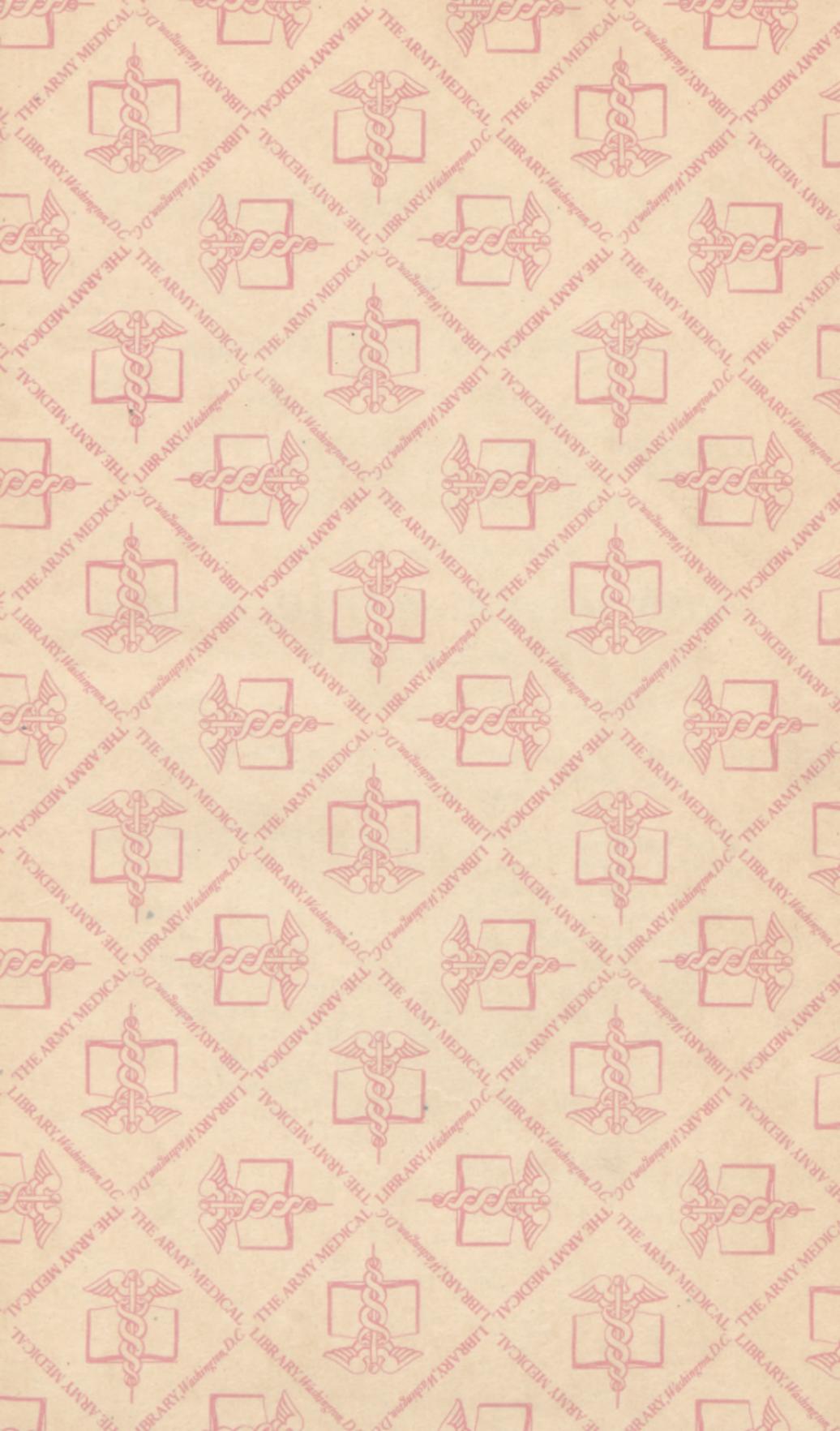


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FIRST  
ELEMENTS OF VITAL POWER:

HOW THEY WERE

ORIGINALLY GENERATED,

AND

WHY THOSE ORIGINAL ELEMENTS ARE STILL INDISPENSABLE  
TO THE PRODUCTION AND REPRODUCTION OF  
VITALITY IN THE HUMAN ECONOMY.

AN ENTIRELY ORIGINAL AND

STARTLING EXPOSÉ OF IMPORTANT MISTAKES

THAT UNDERLIE THE

TEACHINGS OF "MEDICAL SCIENCE" (SO CALLED)

IN CONSEQUENCE OF WHICH, FEARFUL NUMBERS OF LIVES ARE DAILY SACRIFICED!  
AND THE CONSTITUTIONS OF OTHER FEARFUL  
NUMBERS BROKEN DOWN.

These, with other facts and causes of the present deterioration of the Race (especially the American Race), will be presented, with proofs irrefragable. Correctives will be immediately demanded by the whole intelligent investigating community. The Materials of the Human Body will be known and proven. Correctives of the many mistaken Theories in relation to the Formation of the Earth, the Origin of the Rocks, Trees, and Animals; their progressive changes, developments, &c., &c. Man (Ethnology), and the causes of the present varieties and conditions of the human race, &c. It has cost me my life-long years to be enabled to present a synopsis of facts as I pronounced them in three LECTURES in this city.

BENJAMIN HARDINGE.

NEW YORK:

1870.

ANNEX  
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## PREFACE.

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“VITALITY—gentlemen,” said the far-famed Professor ——, to five hundred who had stepped down from the shades of Parnassus, into the “anxious seats,” of the medical amphitheatre of “great expectations.” “*Vitality*, gentlemen,” said the celebrated Doctor ——, at his opening Lecture upon Physiology and Therapeutics, “Vitality is a word to express a something of “which we know nothing. Our business here is to understand “the analyses of the materials of which the human body is “composed; the minute anatomy of each apparatus, and every “organ and its functionary action in the human economy. But “to explain the w. Vitality is not within the reach of human “prerogative, although we meet the word at every step in “our studies. It means that mysterious something that has “never been defined by man.”

There was one among the graduating class who did his own thinking—and his own reasoning. He was also a close observer every where, in the external world around, as well as in hospital practice. He would tell the fable of so many “tracks into the den, but few tracks coming out.” He had read Dr. Sir Charles Bell’s confession, (after over forty years’ practice) of the fearful results of great mistakes that underlie the whole false superstructure called the “Science of Medicine,” “Therapeutics,” or “Healing Art.” Our “original” saw with his own eyes, and heard with his own ears the corroborative words of all the old, honest, experienced physicians, “that full three-fourths of the doctors are killing instead of curing, and breaking down the constitutions of the human race at a fearful rate!” And he set about the study of man with a determination to know *by what laws we live, move and have a being*. In short to know the meaning of

the word "*Vitality*." He studied long and ardently. He found the books wrong on the most important materials which compose the human body. And this particular was of itself sufficient to condemn the whole profession.

He found that man for his very existence, yea, from his first embryo formation, his very frame-work is dependent upon a substance of which not one word is mentioned in the books!

He not only discovered the monstrous mistakes and their fearful consequences, but he discovered what *Vitality* is; and not only what Life-Power is, but he has discovered what it is not. He has found it to be no "hidden, mysterious, incomprehensible entity, not left within the powers of human investigation to know all about." But that *Vitality* is the resulting power of the play of many elements known only to the man who has spurned all the false teachings of the schools, with reference to the formation of the earth.

And now, after his whole life-long years of study and practical tests, he is enabled to present in the following pages a synopsis, an epitome of his theories with reference to those (heretofore abstruse) subjects, together with such irrefragable proofs, plainly presented, in style and manner unique, original, and somewhat homiletically varied in arrangement; and it will be found by the intelligent reader that every paragraph is full of meaning and forcible connection, elucidating in the briefest possible manner my whole theories, embracing creation, inorganic as well as organic, showing that both are inseparably connected, in the production of *Vitality* or Life-Power in both plants and animals. And although all the processes of creation were slow, when compared with our conceptions in reasoning upon other subjects, yet the reader will have discovered that this book has been written by a man who has made himself familiar with every generating process; the spontaneous working of every chemical law, together with its simultaneous action in all those progressive developments and alternate changes, viz.: How and through what agencies a *first gaseous spheroid* was formed; how *nebulæ*

were generated and aggregated. Thence how the rocks were formed. Thence the hows, whys and wherefores; the generating of every elementary action in all the stages of organic development up to the Adamic period, of perfectly formed lung breathing Mammalia. Man being the culminating acme of all that had preceded him—a distinct type, a mentally as well as physically organized being. And here, it is obligatory on me, to say that I am the one referred to who has always been accustomed to do my own thinking; and further, it will have been seen that I could not (truthfully) explain these subjects without throwing a Congreve rocket into the medical camp, which will completely explode, not only the whole theory of present and past Therapeutic practice, but demolish the proud Temple of Medical Science from its very base to cupola, and imposing alto relievos, and lay bare all its interior teachings with the irresistible scalpel of scientific truth, presenting the proper correctives in conformity to the unerring, immutable laws of God and nature, as will be fully explained in the following pages. By reading them attentively, you will be the better enabled to live much longer and more joyously in the land which the Lord your God has given you, is the full belief of

BENJ. HARDINGE.

This book is thus hurriedly printed  
 Letter-press by a private printer  
 in 16 page forms; and the forms  
 distributed before I had time  
 to revise. Hence my correction  
 with a pen - these 87 pages  
 embrace a Synopsis of my  
 forthcoming work in Extensive  
 (by Appleton & Co.) There are not  
 for sale or distribution. Feb 6.  
 Secure my Copyright. Harding



## INTRODUCTORY REMARKS,

INCLUDING A SYNOPSIS OF THREE ORIGINAL LECTURES DELIVERED BY ME,  
*EX TEMPORE*, IN THE CITY OF NEW YORK,

ON THE

### DEVELOPMENT OF WHAT IS CALLED LIFE, OR VITALITY.

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THE word LIFE is a very common word, a monosyllable of only four letters, sometimes called Vitality, sometimes Motive-Power, sometimes an Etherial Aura, etc. But these words teach us nothing, but are used only as vehicles of thought to express the name which we have been taught to apply to a power that we see developed in infinitudes of forms and functionaries throughout every species of organic matter, in accordance with and in conformity to each particular organism.

A half a century since, I was taught by the learned of the age that the word *Vitality* was a word to express a something of which we know nothing. And I have heard the same blind, portentous mistaken fallacy pronounced by our distinguished professors in the amphitheatre of physiological science at different periods ever since, up to the present time. The result of this mistake is as alarmingly great now as ever.

The destruction of human life, and the breaking down of the constitutions of fearful numbers daily for the want of a perfect knowledge of all the elements of Life-Power, and how vitality is generated and reproduced in the human body, the materials of which are not presented in the most elaborate medical works up to the present time, are facts to be proven in these lectures.

Also to understand all the various grades of Vitality or Life-Power exhibited to the eye of common observation, and to be qualified to foster and control this power to a great extent; to extend its existence in our own animal economy, by

reproducing its waste in the fluid secretions; by first knowing the physical elements of the framework of all animals, and of man in particular—in short, to understand the ways and means of generating and inviting this tenacious life-power for years, yea, many years longer than without this knowledge, our days of healthy existence are comparatively few, and our lives much shorter in consequence of the willing indifference, as well as the all pervading ignorance of the whole human family upon this subject, of all others, to every man and woman, the most important.

Life and Intelligence are inseparable companions, from the highest to the lowest genera and species of both animal and floral life. Although intelligence exists in but a very low degree in the lowest animal organisms, and scarcely recognizable in plants and floral life, yet we know that such is the fact.

The next thought that presents itself is the infinitude of grades of both life and intelligence which meet the eye of our common observation with reference to this fact. Not only in the lowest grades, the connecting link (so to speak) between animal and vegetable organisms, do we recognize a species of intelligence, but the same fact pervades every genera and species of floral organisms, and it is this fact that makes the study of Botany highly interesting.

✓ There is an elementary life-power not only in the fluid globule circulation of all animally organized beings, from the minutest animalcule up to the human organism. The life germ deposited ✓ is in accordance with the parent organism, both in animal and in vegetable and floral life. While in engrafting fruit trees, you derive the life fluid from the sap of a sour apple-tree into capillary recipients of the scion of a Bartlett pear, and a tree is thus sustained, yet the fruit it bears is in accordance with the ✓ organic fibre of the parent of the scion, to absorb such other elements as with ammonia, hydrocyanic acid, etc., produce Bartlett pears.

The material substances of which plants and trees are composed, and how these materials were first generated and alternately organized into the said living developments we shall know all about ~~hereafter~~ *in these pages.*

The next thought that presents itself in this brief glance of our subject, *a posteriori ad prius*, and before we shall have explained the origin of the elements of the materials combined

in generating the living or vital principle of both vegetable and animally organized life, its waste and reproduction in both, there arises another fact. There is no gradual rise of intellect (I use that word for the present purpose to convey the correct idea which we shall arrive at before we finish, and more especially when we shall have got through the fog of false teachings). There has been no *gradual* rise of animal intelligence, in proportion to alternate development of advancement in physical strength until we shall have reached Man.

We are all more or less familiar with evidences of intelligence in vegetable organisms. The sensitive plants in warm latitudes are striking illustrations. They are classed as *Genus Mimosa*, because some of the species enclose themselves within their virgin drapery at the approach of footsteps, or concussion of the ground within several feet around their habitation.

If you slightly pinch the extreme outer pair of the leaves of the sensitive plant in your garden, (of a species indigenous to North America,) every pair of leaves will in regular succession communicate the injury to its next neighbor, until the three sets of leaves on three different stems, shall have closed inward and bowed themselves down into a species of quiet indignity and wounded pride for an hour or two. The reciprocal action of plants in their early endeavors to respond to the genial smiles of the sun, is indicative of one of the agents of Life-Power.

The frame-work of your trees having been first formed in the way I shall explain, will show a higher grade of intelligence. If you bury a bone near your grape vine, and examine it a year afterwards you will find that a feeler has been sent to the bone from a main root, and that feeler has found its way into every foramen of that bone. That the nutritious phosphide of lime—carbonate of ammonia and of gelatine may be extracted from the bone during its decomposition, that you and I may not have sour grapes, while the vines themselves seek direct communication with the sun. Keep a woman from the sunlight, and she also will be sour and without color or health.

Some years ago I delivered an original lecture on "Wood and Woman," and another where the subject was "Men and Rocks." The novelty of such announcements brought many ladies, who

went home satisfied that my subjects were not only in philosophic keeping, but were said to have been instructive. The texts were scientifically suggestive to me. I found them copiously prolific. The great desideratum embraced in the first lecture, consisted in teaching the ladies the laws of vitality, and how to preserve the fire in the eye, and the rose on the cheek, and the ivory teeth, and all the springs of life and locomotive action three times as long as they now do, and how to evade the whole catalogue of nervous headaches, neuralgia, general debility and listlessness and languor, depression of spirits, torpidity of liver, and the ninety-and-nine other complaints, besides trouble with kidneys, growing worse by swallowing "sub. mur. hydrargari," which in nine times out of ten brought on that dangerous disease.

With reference to intelligence in animals, we shall find no corresponding rise in the scale of alternate development of genus and species, in the chain from the reptile up every step, in all the different radii to the Ourang-outang or Gorilla. I shall prove man a distinct creation, *genus homo*, a double type. I shall prove the fallacy of the concatenation or "development theories," of Mr. Darwin and La Marck and others, whose publications have only darkened the minds of the tens of thousands who depend upon others, to lead them into infidelity.

I have said that there is no corresponding rise in the intelligence of animals, during the long ages of alternate development of both genus and species in animal organisms. It needs no great stretch of thought or observation to prove this fact.

I have watched with my own eyes the circumventive, mischievous, quick movements of the sea-crab at low tide in clear water. See him with a very small pebble in his forceps, waiting the opening of the oyster, so that the pebble which he quickly puts between the unconscious bivalves affords him a quiet oyster lunch. Here is a moral lesson to thousands of men who boast in the word *smart*, and in circumventive talents; the crab is his boon companion.

So that the Gorilla, though very strong on account of his coarse organism, and can stand at an angle so near  $90^\circ$ ; yet, in intelligence bordering upon reason, the crab is far his superior. Phrenology loses nothing here, the anterior lobes of the brain are very low, and although the crab is almost minus brain, yet, he exhibits a pair of prominent telescopes, and will give you unmistakable evidence of nerve power, if he gets hold

of your finger. The bite of the claw of a lobster is like that of a screw-vice. If you punch the eyes of the lobster he will let go his hold. The large heavy claw of the lobster only communicates with the body of the animal by a thin, small, tender joint containing a nerve encased in a cartilage, which communicates with the optic nerves of this almost brainless animal. If you step upon the electric eel of South America, he will knock you down with the shock. The spring of a salmon up a waterfall seventy feet high, against tons of pressure, gives us some idea of a combination composed almost entirely of water, organized by gelatinous hydrous silicates and phosphides, the elementary substance of the salmon and electric eel, and the whole finny tribe. Water is of itself a remarkable electrode.

The human brain, particularly the anterior cerebral portion, is larger than in any other animal, hence it is our great galvanic battery, 80 per centum water.

About eighty-nine one hundredths by weight, of what we call water, is an element which has been named oxygen, from the Greek verb to generate. Yes, it does generate. How does it generate? By its universal destructive power it generates static electricity. It was the first elementary agent in forming this globe. We shall know all about this directly. Oxygen by its destructive properties is our first agent in Life-Power, albeit, oxygen and carbonic-acid combined become a death-power, while oxygen alone would kill us with kindness; and yet, oxygen with about three times its weight of nitrogen is welcomed into our lungs. What for? How does such a universal destroyer become a vital power? By attacking the waste deleterious substances and throwing them out by the return process, or falling of the bellows, the lungs, while it keeps on finding its way through the air-vessels into the blood vessels, generating electrical action throughout the entire and minutest channels; producing capillary attraction (that heretofore mysterious power that we shall explain), at the same time evolving caloric, which we call animal heat; and by perspiration superfluous watery fluids are exhaled from all parts of the body. There is now and then an enemy which this great analytical destroyer finds difficulty in removing; such as virus, poison, cancer, hydrophobia, etc. Then change these substances into food for oxygen: we shall know how; and a word to the wise is sufficient. For instance inject into the cancer that which will render all the fibres and tissues

an easy prey to oxygen, thus opening the other absorbent vital agencies. But these are not medical lectures exclusively.

To fully understand Life-Power is to know all its elements. To know them is to know how they were and are now generated. *Vitality* is not a unit; a mysterious indescribable entity; but the resulting combination of many agencies, as we shall find. How find? By retracing all and every species of matter, organic and inorganic to their common origin in a gaseous form and condition; know what these gases were then, and how they were generated.

Electricity is not Vitality, as many a hemiplegiac or palsied subject has found out too late to be here to tell us of it. Electricity, though the most universal potent power, was not in itself an entity, but a resulting power of elements which preceded it. We shall know about its action in connection with ourselves, as well as the world around us.

Electricity, in itself, is not Life-Power. Therefore we shall remember this fact while we are speaking of its universal agency in every action in and around us: In every storm and every calm; in every sound, whether harmonious or discordant; in music and language; in poetry and painting; in the act of memory, the will and the affections; and processes of reasoning and speaking. This elementary agent is the propelling power when combined with the other elements that act upon the organic machinery in accordance with the more or less complication of each respective organism; somewhat as latent steam in the boiler becomes power, when in circulation and expansion, or motion and exhaustion. Thus the first beginning of a law of Vitality in plants, long (and I shall explain how long) before some of the materials for man's Life-Power had an existence. Albeit, every point of progressive creation tended toward this acme of God's purpose. And we shall have learned other facts in addition to what constitutes Life-Power in the human family; and how we may prolong our lives; or shorten them. How woman may continue to blossom after many a tornado has prostrated her for the time. She rises through the combined agencies of Life-Power, like a field of corn, which the merciless gale laid low on yesterday, stands to-day erect in its silken pride, plainly speaking in the breeze in soft and sublime whispers of eolian enchantment the truths which I am going to elucidate with reference to intelligence in plants, as well as its comparative development in the lower animal —

H. H. H.

It is our business to know the operations of oxygen and electricity, and hydrogen and the other elements of Life-Power in the animal organisms. Unless we know all the materials of the organism, whether more or less compound, we cannot know anything about these operations of the elements of vital power in the human economy. You may study minute anatomy, and physiology forever, unless you know, in the first place, the materials of which the human body is composed (and I am going to prove that the books do not even know or teach this first necessary lesson). And I say further, that Vitality cannot be understood by the teachings extant. True, you may know that man is an instrument of a "thousand strings," and wonder that he "keeps in tune so long" (under present trying circumstances). That he is an organ of a hundred thousand stops. That he is a wonderful engine and musical electro clock of a half horse power. A locomotive and fire engine. A windmill; a bagpipe; an air-gun; a water-mill and aqueduct; a velocipede and viaduct; a demi-god; a demi-devil; a demon-crat; a demoscrat; a ple-publican; rarely a true democrat, or even a true patriotic republican. A demi-go-gus; beginning not at Jerusalem but New Cork; no longer New York! Leaders of the demos to demon: hence the new names demoncrat and ple-publican. A right angle (*try*-angle), obtuse and hypotenuse. A plumbline; for he walks by the square. Why by the square? He preserves his centre of gravitation and forms a right angle with his mother earth of ninety degrees, or the fourth part of a circle; indicative of moral as well as physical uprightness. No other animal can do this. The lower animals occupy all the other radii, man only the meridian. So in the physiology and order of his creation.

But I have no time now for moral illustrations by allegorical figures. It is my special purpose in these lectures to promulge such of my discoveries in the physical sciences as are of the greatest importance as well as of *vital* interest to the whole human family.

These discoveries have cost me a life-long experience, and a vast expenditure of money.

And, as common count, and common observation admonish me, "the sunset of life" may be premature by some of the casualties or causes not recognized in the bills of mortality; or I may overwork my brain for the benefit of a

thankless world. Then, who can "minister to a mind diseased? Raze out the written trouble from the brain? Pluck from the memory a rooted sorrow? Or, with some sweet oblivious antidote, purge the foul bosom of that perilous stuff that preys upon the heart?" No! I do not mean to say that we can live always, even if we would; but, a hundred years, even now, should be the meridian of our lives of healthy vigor and manhood were it not for three causes, viz: The *devil*; *society's increasing derelictions*; swallowing error, drugs and pills, and the *ipse dixit* of everybody's nobody; instead of doing their own individual thinking. All are contending for that common *prating* about "truth and common sense" without knowing truth. Hence, what is contended for truth and common sense, in one locality, is nonsense in another, all over the world. I ask no man to receive as truth anything more than what I shall either prove or disprove by presenting facts and the proofs. These facts are the results of my early investigations, many of which I published long years ago, naming at that time many reasons against the Plutonic theory. Such, for instance, as *water* found in the middle of quartz crystals. Also, the supernatant *water* found in the center cavities of *Geodes*. Also, found in the molecular divisions of *granite rock*. Also, by the spontaneous jettings out of hydrous silicates at the *Geyser springs*, and many other spontaneous hydro-thermo-silicious *phenomena*. I not only alluded to these facts, which present themselves to the commonest observer, but I discovered the fact that *silicic acid* (so called for want of a more suitable name), was one of the first elements, together with *oxygen* and *hydrogen*, which were generated with *carbon* and electricity into an *aqueous* spheroid of aggregated and aggregating nebulae rotating in chaos for thousands of years.

These subjects will come up in their regular order in my coming lectures, viz: The formation of the earth, origin of the rocks, trees, plants and animals. We have to go much farther back (than the authors of the "Cell and development theories") to know the original elements of Life-Power, the first Germ, Ovary-Egg, Cell, Monod, &c., viz: The generative agents for the perpetuity of species of animal and vegetable life and reproduction. The action of Pollen and Stigma for a similar end in floral life, &c., as aforesaid.

To understand these subjects, we must first not only know all the elements of vitality, but how these elements themselves, and the laws which produced them were first generated.

It is a great mistake on the part of the Professors in all our medical colleges, when they say at the opening lectures that *vitality* is a word to express a something of which we know nothing. No disease ever existed without a disturbance of this heretofore mysterious power. No disease was ever cured without its agency.

This, together with the erroneous teachings with reference to the materials which compose the human body, and how they get there, and how reproduced in the every day wear and tear. To prove this, it will be necessary at the same time to show how all the elements of matter *inorganic*, as well as organic, came into existence, and progressively developed into the infinitude of forms and conditions in which we behold them. I am going to prove, as it will be seen, that vitality or the life-power in plants and animals is the result of long progressions and accumulations from a gaseous beginning toward such a wonderful end. This very great ultimate design of Him whose immutable laws he progressively marked out by primary causes.

Slow, indeed, to our hurried feeble imaginations were these causes being generated; but sure and simultaneous were their action in the first indications of their living organisms as well as their perpetuity by sexual organisms. We shall be fully confirmed in the mistakes of the author of the "Vestiges of Creation," La Marck and others, who, with Mr. Darwin, were original thinkers. But it is by a thinking and searching much further back to know the origin of life-power, or its germ in the ovary, egg, or cell, or other generative agents for the perpetuity of each genera and species of animal life and re-production, or of the action of the pollen and stigma for the similar end in floral life. Those gentlemen have to look much further back to find the *priori* of life-power. Therefore, to understand this little world of ours and its material substances, is first to learn to unlearn the nonsense which has been taught in relation to the geological formation of the earth, and all such expressions as "countless millions of years." We shall find that it was not, nor is now, a "rotating mass of incandescent molten lava, which took 400,000 years to cool a surface for the accumulation of aluminous soil."

\* But that our world had a gaseous beginning, and all the elements of matter which now exist in the three kingdoms of Minerals, Plants and Animals, are the result of progressively generated laws, and their simultaneous application by slow, but sure, successive results in the manner I shall shew, and that these were the results of six divisions or periods of time, embracing about 200,000 years each; making the age of our planet about 1,200,000, instead of countless millions, and all the horrible stuff and nonsense recently taught in this city of New York, and swallowed by our savans in science. Therefore, I shall now proceed to give to the world such *irrefragable proofs*, together with such an alarming exposé of facts, causes and consequences as will (my life for it) produce a happy change in life's claims to enjoyment in the whole human family. I shall not only teach all who are willing to be taught, how to preserve the fire of life in the eye, the rose of health on the cheek, development of healthy muscle on their bones, and power in the galvanic battery of reason, and spring of action over all the telegraphic nerves, which the wisest man that ever wrote called "the *keepers of the house*," that they shall not prematurely tremble. That the memory (in the richest of all caskets, called by the wise man the "*golden bowl*") be not broken, nor the silver cord prematurely loosened. Solomon lived a long time ago. But he knew, not only all the machinery of the human economy; but he knew that the prolongation of human life depended upon the preservation of the vital power. He calls the head the "*golden bowl*:" Why? Because it is the "seat of reason; palace of the soul." The medulla oblongata and spinalis, he calls the "*silver cord*;" which *becomes "loosened"* when those cartilaginous buoyant fluids, from which the electric action in those little batteries, the *ganglia*, cease to be supplied with those elements of vitality, which it is my business to explain. And "the keepers of the house tremble" (the *nerves*). "And the strong men shall bow themselves" (*muscles*). "The grasshopper a burden." Here is a double figure, representing a *drouth* or drying up of the fluids; and the light ("grasshopper") trifles become "a burden." And the "almond tree"—the hair—is deprived of vital fluid and turns white. The eyes have also lost their fire of life; "those that look out of the windows" "darkened." The vocal organs ("all the daughters of music are brought low"), including the lungs. "The sound of the grinding is low." Calomel, sugar plums and heavy hot

doughy biscuit have done their share in destroying the *teeth*. "The wheel broken at the cistern, and the pitcher at the fountain." In the article of death the propelling power of the heart is stopped, and "the door is shut in the street." . . . The whole chapter has special reference to vital power, capillary force, endosmosis and exosmosis, etc., etc. When I hear my learned friends talking about how much more we know in "this age of progress" than Solomon and Moses; and how much farther we are advanced in either the arts or natural sciences; I feel like bringing forward a catalogue of my gatherings from the extreme past. We shall be apt to acknowledge the truth of the saying of a life-long student (when speaking of man and the earth he inhabits): "Nothing is known." My answer was: "Read the book of nature for yourself, sir; read both analytically and synthetically; read from effects back to causes, and from causes to effects. Then, by your comparative induction and long and close observation, you will be able to 'prove all things and hold fast that which is good' and true."

A few months since I had put an advertisement in the "New York Medical Gazette," calling upon the most experienced in the regular profession (in the practice of therapeutics) to see me at my residence, 130 West 34th Street, with reference to the necessity of an immediate change, etc.

A few and but few called; and those who have since spent many hours with me, have heeded and adopted my correctives, and will never lose a patient by mistakes.

I have cautioned them against ever using either *bromide of potassium* or *digitalis* (purpura), . . . both act the part of an insidious charm at first . . . but the capillaries (from being overworked) . . . have dilated and so much weakened, that their functions become nearly suspended, . . . the nervous system becomes exceedingly weakened, as indicated by loss of memory, dimness of sight, spots (like flies, before the vision) (called "amourosis"), and finally paralysis and death.

Bromide of potassium is all the go among that class of physicians who are mere copyists, and the name of that class is legion. Drug-stores in the city prove the results will be as I say. You may have unquestionable evidence from all the European Hospitals long years ago.

It had its run for a time. But lo! the fearful results! and hence it was abandoned; excepting in a single dose with ammo-

nia to bring a man out of delirium tremens, to die in the reaction; and hence arose its fatal charm. If I am called upon for the proofs, I can present individual cases recently in this city where I interfered, and where I did not interfere, and whom I can bring here, and of others who cannot be brought here.

Valvular obstruction, regurgitant reaction—blood not decarbonized; nervous system gives way. The memory and whole mind admonish approaching paralysis, or softening of the brain; and all the catalogue of portentous symptoms of this character. . . . I referred them to its history in Europe, from 1828 to 1836, when it was abandoned. (See authorities of the celebrated Doctors Wilson and others, of Lock Hospital, Doctor John Egan, Walker and many others.) The same was reported from Doctor Huette of Paris, and others. We find a similar report from Doctor Philman of St. Petersburg, and many others, all of whom and of the facts seem to be entirely unknown now; and these preparations are this day killing thousands in this city alone. Many have fallen under my notice. I saved a minister from being sent to heaven before his time (by my interference); and when I called to kindly caution the *Celebrated Nerve Doctor*, on — St., the latter told me that “he had no time to listen to my abstract theories.” . . .

Bromide was condemned by all the old and most experienced practitioners, as a killing instead of a curing compound. Calomel was then adopted as the sheet anchor of the profession, and its havoc among the human family for the last thirty-eight years, is too well known to every old physician and the world at large, to need further comment here: although the mercury ranges high in the thermometer of many practitioners still.

It is still contended that *Sub. Mur. Hydrargari* is the only lever to rouse a torpid liver of those who have survived among the millions of pigmy swallows of calomel and other mineral as well as highly concentrated vegetable poisons. True, men were created to die, but not to be killed off in this way before the time.

And while I thus enter the arena of a whole army of martyrs, I fully appreciate the value of all the preparatory scholastic studies, embracing years of intense application; and so extensively varied, and so minutely complicated are the studies of anatomy and physiology of man, “so fearfully and wonderfully made,” that the moral effect upon the expanding mind of the

thorough student, together with the increasing responsibility, all combine to mark this class of men with superior attributes as they move in the society of other scholars and gentlemen. And there is no earthly shrine at which I worship save that of highly cultivated mind. . . . And when I behold the sight of hundreds of medical students who have stepped down from the Acron of Science into the amphitheatre of "great expectations" from each learned Professor, thence into the demonstrating *hades*, and alternate tracings where "the knife the leading nerve lays bare," . . . and finally prepared for examination . . . tell off the names of the 240 bones, articulations . . . radii . . . fulcrum . . . processes . . . number of foramina, &c. . . All the (*near*) 500 muscles and every tendon, from *tendo achilles* to *sterno-cleido-tendo-mastoides* and *sphenoid* and *ethmoid*, with its 13 *processes* and 22 *foramina*, and know the minute anatomy of the head and brain . . . and all the dividing membranes, from the strong *dura mater* to *septum lucidum*, &c., &c. . . This is all indispensable, but I shall prove the indispensable necessity of not only knowing the processes of organism, but also it is desirable to know all this and the elements and functions which connect them externally and internally in the processes of thought, will, and locomotive action. . . . It is not sufficient to tell and lay bare with the scalpel, the different classes of nerves. . . . That the will-power travels out over the anterior column, and the nerves of sensation come home to the great sensorium over the posterior column of the *medulla spinalis*, the brain itself acting the part of a galvanic battery; (water being an electrode,) the brain being four-fifths water; yet I shall prove to you that electricity, though a great universal power, is a resulting agent, and not, in itself, life-power; but is often a death-power. Oxygen is an important agent in life-power; it is also a great destroyer; when inhaled into the lungs it kicks out behind it, at every expiring breath, the decaying carbonaceous residuary waste of the system, generating animal heat. All physicians know Leibig's theories of this, and the oxidation of the food in the stomach, friction of the fluid globules, action of the capillaries, &c., all generating animal heat. And Dr. Larnder's theories of the gases and fluids, and light and heat, have been rehearsed enough here, and happily exemplified these two winters. But while we have been "looking to the East for light," we have been egregiously befogged with reference to the

subjects embraced in my announced intellectual bill-of-fare for these lectures. With the other physical arts and sciences generally, it has been different. It seems to have been the order of Providence that the arts and sciences should first take their rise with the eastern sun, and spread with him their glorious luminaries, that have lit the ponderous wheels now rolling over the Rocky Mountains, laden with the fruits of the long and diligent toil of philosophers, sparkling with the diamonds of genius, and spiced with the odors of Parnassus, to the shores of the Pacific: and none have given more evidence of reciprocal favor than some few bright stars in the medical profession, some of whom I see before me to-night, who, my life for it, will radiate a splendor in their medical reputation, especially in their therapeutic practice, and become immediately stars of the first magnitude in the great medical galaxy of this western world.

Why? Because they have not only the honesty to admit the truth of my theories, but will govern themselves accordingly, and they will lose no patients by mistake. They will better understand the power of *endosmosis* and *exosmosis*, and human life will be preserved while they enter the arena to combat the fell destroyer. Nay, further, we may be able to tell the connective functions of *tuber cinerii*, those capillary fibres which take their rise in the *basilar* regions of the cerebral hemispheres, forming the *physical* connecting link between *mind* and *matter*.

And know, further, that these particular *tubular fibres* become more and more developed as mind and memory become more and more expanded, as well as more tenacious and strengthened, while they draw a large portion of their fluid *life-power* from the cerebellum and lower ganglia. But in vain shall we know the extremest functions in minute anatomy, while we are imitating some blinded Professor in *therapeutic* practice by destroying those life-functions in the continued doses of *bromide of potassium*, either alone or combined with *digitalis purpurea*.

In vain has the eager and industrious demonstrator of anatomy classed off the grand divisions and subdivisions of the anterior and posterior brain, ensconced in Dame Nature's night-cap, the *dura-mater* and its silk-like membranes, the *pia-mater* and *arachnoides*, *septum lucidum* and the ancient seat of the soul in the *pineal gland*, and all the changes of strata from *cor-*

*pus callosum* to corticle. He closely examines those windows to the soul and their neatly joined frame-work. The sphenoid and ethmoid superciliary orbits. He finds the ethmoid the most complicated bone in the whole body, with its thirteen *processes* and twenty-two *foramina*. He lays bare the evidences and functions of the three sets of nerves, ganglia and branches. Those which carry out the will power over the anterior column of the *medulla-spinalis* and those which bring in dispatches from the external world over the posterior column of the *medulla-spinalis*, through the great common gateway (*foramen magnum*), into the frontal upper chambers of the great sensorium, throne of reason, "palace of the soul."

In vain might he minutely describe the intellectual compartments of *Dame Mnemosyne* and her four daughters, viz: Poetry, Painting, Music and Language, in contradistinction from those grovelling rascals who occupy the cerebellum, as Dr. Spurzheim and Mr. Fowler and others have so graphically described.

There are hundreds, yea, thousands who can amputate a limb without a jerk of the saw; set the bones, watch and relieve the bandages; yea, these are important trifles. Yea, there are hundreds who perform internal operations the most difficult that can be conceived of, and with a lady's hand, a hawk's eye and a lion's heart. He has astonished every one around; and he has saved a precious life, and is worth his weight in gold, and I know such.

But, in the "theory and practice of medicine," our subject changes into a deep contrast, demanding our sympathy as well as our immediate interference. Albeit we see them hurrying to and fro with the anxious care-worn evidences upon their very countenances, while in the pursuit of a professional, self-sacrificing and oftentimes thankless occupation. By night and by day, from garret to basement, in storm and in cold, to kill or to cure by comparative induction, or by book authority, for twenty, thirty, or forty years—"then to be thrown back mortified" . . . as the most distinguished have both acknowledged and written. . . . "Mortified and disheartened," numbers are this day exclaiming that the whole theories and practice of medicine should be stopped by legislative interference. So said Sir Charles Bell. . . . (See his Preface to his last work.) So said old Doctor Stevens a few months since.

In answer to my question to one of the oldest practitioners known to fame in this city, as to the term "medical science," "Instead of the word 'science' introduce 'Will o' the Wisp.'" There is the answer to your question, sir," he said, (turning to the frontispiece of Josephus' large volume). "You see a woman, with low forehead and cat's ears, with a lantern in one hand, pointing into an unexplored cave. Her drapery entangled in a skull and marrow-bones. There" (said he) "is Ignorance stumbling over Death. No, sir, I was a close faithful student; I have had all the facilities that the old and new world could present; I found out long since that something was radically wrong from the very foundation; and as to the practice by books, God alone by miraculous power can save three-fourths of the patients either from death or an impaired constitution! No, sir, I give but little medicine, and those are of a harmless, hygienic description."

Such physicians I have not only found original thinkers, especially among most of the old class with whom I conversed for hours together upon this important subject, but I have now and then found old heads on young shoulders, who, after a few years' practice, have discovered the mistakes aforesaid, and, who being well versed in animal chemistry and a thorough education in anatomy, had discovered important mistakes in physiology as well as in therapeutic practice, and have adopted a simplified system in the treatment of all diseases, relying upon hygienic agents to assist nature in her always ready efforts to throw off disease.\* True, there are cases where the immediate action of certain chemical agents combine with the natural hygienic influences, and a life is often thus saved. But it is useless for me to talk to that large portion of young physicians who practice by book authority, and if the case is a fatal one, they throw off the responsibility upon books.

\* To be treated upon in these pages: And is expected in my coming book for universal circulation under all the prestiges of the press & standing

MATERIALS OF THE HUMAN BODY,  
ANIMAL ELECTRICITY, &c.

It is not my purpose here to dwell upon the progressive comparative anatomy of animals during the last *grand division* of creation, any further than is necessary to prove some very important facts not to be found in other publications than my own that I know of, viz: The materials of which the human body is composed; and by what laws, elements and agencies we live, move and have a being.

A few preludes are necessary in this department.

In all organic life, from the lowest order of both plants and animals, we find similarity to *crystalline* form as well as deposit from a particular and the most spontaneous element in the mineral kingdom. In the growth of trees this element is absorbed; and forms the strength of the fibre in very elongated crystalline forms, in hexagon angles. The same phenomena exist in the frame-work of the bones of all animals; deposited differently in different organisms; not only in the bones, but cartilaginous tissues, and the finer membranes, etc., as I shall describe. I briefly state here that the whole animal and vegetable kingdoms depend upon the mineral world, not only for their strength, but for a wonderfully diversified number of electrical batteries, (so to speak.) This element is *silica*, a non-conductor of electricity.

The absorbent action by these curiously formed compound phenomena, operate in obedience to a law of attraction through the thus formed capillary tubes. A law of absorption thus formed will lift a fluid higher than itself.

If I were a teacher of animal and vegetable chemistry and the natural sciences, I should tell the student that an oak tree, while it is carbon and oxygen (nearly equal parts), is a living grocery store. Not alone of yokes, brooms and axe handles; but of corn, soap, starch, sugar, vinegar, paper, ink, leather, bath-brick, metal-potassium, boracic acid; pyroligneous acid, iron and other metals; coloring pigments, a small portion of hydrogen and hydrous silicates.

Thirty years ago, *hydrous silicates* were seldom or ever mentioned either by professional men or any body else, save of the experiments by *Berzelius* and a few others in their little experiments, and these copied into chemical books.

Albeit, hydrous silicates are spontaneously produced all over the world, not only to provide all the frame-work for vegetable and animal organisms, but to be also deposited upon the surface in obedience to a law in physiology, of both plants and animals, as I have stated.

My own theory in this particular, as well as all others, will be understood. I briefly say here that, from the moment we enter this breathing world all the processes of waste and reproduction have begun their never-ceasing chemical operations for the perpetuity of Life-Power; and however mysterious these operations may seem to the superficial student, who is content with the teachings of his master professor, that "Vitality is a word to express a something of which we know nothing," I shall I think, shew that all the operations, as well as all the agents employed in generating, producing and reproducing this great mysterious tenacious power called *Vitality*, are within the scope of our comprehension.

But in order to understand these said operations, and the agents employed, and how employed in the production of the great result in question, we must well know the A. B. C. of creation, *à priori*, to the end of the alphabet; and then be able to retrace all the grades from "Izzard to A," *à posteriori ad prius*.

And I am bold in the prediction, that the physician who will contend that all this study is not necessary to qualify a doctor for the practice of medicine, but continues to speak with indifference in reference to my theories, will find himself without practice sooner than he anticipates.

Because the most observing among the most intelligent of every community everywhere all over the civilized world, have been finding out the lamentable truth of the prevailing proverb that "*the doctor is oftentimes the most dangerous disease.*" Why so? Because *Vitality* is the *only doctor* in the practice of medicine, and Vital-Power is not compounded in the mortar of the drug-store. Neither is it a charm to be invoked by the colored show-bottles in the windows.

It will soon be seen that there is something yet to be learned in minute anatomy, as also of what materials the human system is composed (and the books are far from being correct upon this important branch of our subject; as I shall also prove before I

finish): and not only these facts and their proofs; but the greater and most important necessity of all, arises at this point of the important subject of these lectures, viz., the elements and agencies of *Vitality* or *Life-Power*, and how, why and wherefore, and from whence these said materials which compose our physical bodies, are taken up and disposed of in our complicated developments for many years of continuance; and how our said vitality, or *Life-power* is reproduced when continually drawn upon in the every-day exhaustive action; mental or physical, or by both or either.

Had I the time here, I would explain the minutia of my theories on the human economy. Those thin membranes of *silicious albuminates* spoken of elsewhere, you will find not only playing their parts in the membranes of the great sensorium and ganglia as non-conductors of electricity; but like phenomena pervade the whole classes of nerves and their branches: and not only there but throughout the whole muscular tissues, forming multitudinous galvanic batteries (so to speak). The oxygen of the fluids being the oxidizing agent: and electrical action is produced by both the processes of *waste* and *reproduction* going on perpetually in the animal economy.

Liebig vaguely saw something of these phenomena, when he thought that he had discovered in the "contraction of the muscles that the nerves supplying the part withdrew their vital protection; and oxidation under the chemical laws, and the consequent development of force, resulted." A strong evidence of this theory is the waste of animal substance which occurs proportional to muscular action.

This theory is sustained in the examination of the organs of electrical fishes, to which I alluded just now, where, by oxidation of tissues, electricity itself, instead of muscular force, would be eliminated when the protecting agency of the nervous system was withdrawn. The analogy of the action of the will or nervous system in producing, in the one case, muscular, and in the other, electrical action, is a subject never yet explained. My object is to understand the cause or causes of these different phenomena. The *gymnotus* is found in the *fresh* waters of South America (*electrical eel*), and the *torpedo occidentalis*, varying in weight from 20 to 200 lbs. Their shock is sufficient to prostrate a man. The electrical organs are on the anterior and lateral portions of the brain.

Thus, it will be seen, that electricity is not in itself *vitality*, nay, it is not an *entity*, but the result of spontaneous chemical action of other elements (as I shall have shown). It thus becomes of itself a commanding power; a life-power; a death-power. A life-power, when generated in the animal organism (as I shall have described). A death-power, when applied artificially by a strong shock, either from a frictional, magnetic, or cup battery.

Had Galvani surcharged the living frog with the same strength from the battery, he would have killed the frog; and so of experiments upon the human being.

A patent was recently granted for killing whales in this way: They take into the row-barge a strong electric battery with long wire to connect two harpoons; they throw both harpoons into the whale (the latter being already fully charged with phosphide and electricity)—the overdose paralyzes him—he can neither dive nor swim away.

He has fallen into more fatal hands than his common fearful enemies, the swordfish and thresher.

A concussion thus produced is more dangerous than that produced from a fall or other external causes, which often prove fatal, as every physician knows.

The different classes of electricity described elsewhere, combine to command a power indescribable. Our aim is to understand this power in its compound as in its less complex form.

The spirit-rapping sound of this power is now ticking upon the tympanum of our memory in a thousand telegraph offices, travelling at the rate of 182,000 miles in one second of time, beating the reveille—news of the morning's dawn, of startling events, for good or for evil, which transpired yesterday on the opposite side of the globe; a lightning report of some savage massacre, or the harbinger of hope of a higher tone of coming civilization than they heard from us and from Andersonville five years ago! Human efforts to concentrate magnetic-power into what we may very properly call the "lightning talk," are very antiquated, as I shall show on another occasion, when I intend to unfold my gatherings (from the extreme past)—the origin of many, yea, all of our most important arts; facts, which the speculative and curious will hear with startling interest. Excuse the digression. There is no material substance, either

organic or inorganic, either passive or active, could have ever existed without this primary power (electricity).

The breath of this power is felt in the welcome zephyr's vernal aroma, and heard also in the tornado which raises the Atlantic to a foaming fury and calms her again into a gentle lullaby. It is this power which is perpetually destroying a world, and by its agency a new world is being progressively formed from gaseous to semi-fluid, thence into fluid, thence into semi-solid, and finally into rocks, plants, trees and animals. But first by its agency in generating new elements and new laws, that have always acted simultaneously with their productions. We must understand all these facts, or we are also dealing in unproved hypotheses.

I have only as yet presented results of some of the elements which combine as auxiliaries as well as the power itself that we use in song or speech, in sight and taste, in hearing or in locomotive action, the brain being our galvanic battery, to use at our own pleasure, and oftentimes at the pleasure of others. Electricity is a power which is ever changing, is never extinct, but is ever in action everywhere; ever busy in the great geological laboratory under our feet; fills all space; rides upon the wings of the morning, dispensing vernal sweets to the whole floral and animated world. It is God's armed power. Would you see it? Look into the interminable regions of space; think onwards until you pass the millions of worlds which roll round worlds in harmonious obedience to its law. Would you find its end? Think onward until you pass into space for thousands of myriads of miles, passing thousands of other worlds, and new suns and moons to other worlds; still onward thinking, out into opaque darkness. Stars again appear. Think onward until you approach other solar systems, other hundred millions of miles further away—away!

You ask yourself, where is the end? Nowhere! Where the beginning? Nowhere! Return, then, and chant your vesper hymns under the sweet influences of remembrance of the lost Pleiades; for worlds as well as men have their allotted time to exist, that other worlds and other men may be produced. Life, then, and its reproduction is perpetuated by death, destruction and decomposition, and the processes therefore must be going on always.

HARD AND SOFT PARTS OF THE HUMAN BODY—  
THEIR ELEMENTARY SUBSTANCES—HOW AB-  
SORBED, &c.

In an extemporaneous (conversational) lecture in the new hall of the Y. M. C. A., on the evening of the 16th of March last, before a number of the Medical Profession; Doctor Griscom presiding as chairman; I proved important mistakes in all the medical authorities with reference to materials of which the human body is composed, together with other mistakes exceedingly alarming.

I said that of all the subjects written upon in this book-making world, or lectured upon in this lecturing age, none have suffered more, and been more and more befogged and mystified, than those announced for these three lectures. And while I would pay all the forms and courtesies of every-day life, especially before those care-worn philosophers, those distinguished gentlemen whom I have the honor of addressing on this occasion, with some of whom I have had much conversation upon these subjects, all of them admit with me that, to understand Man as a physically and mentally organized being, embraces the necessity of knowing not only the *materials* of which the human body is composed, but by what *laws* and their agencies we are kept in motion, by our connection with, relation to, and dependence upon those laws, their elements and agencies (directly and indirectly) that surround us. Not only for our physical organism, *a priori*, production and reproduction of the *hard* as well as the *soft parts*, but further also for life, strength of thought and will-power, as well as strength of muscle and locomotive action. I will now name over from memory all the analyses of both the hard and soft parts, as taught by the medical schools as the material substances composing the human body; and for the correctness of my memory, either in these or in minute anatomy, I respectfully refer to the experienced physicians present, for correction.

The chemical analyses of the bones as presented by Doctor Gray in his standard text-book, last edition, are as follow, [viz.: All the analyses of both the hard and soft ~~spots~~ as taught in the schools I repeated from memory correctly, as certified by the

physicians present, (see *Gray's Osteology*), as well as muscles and nerves, etc.] and not a single word about the principal primary element that forms not only the *first frame-work* of the whole animally organized kingdom, viz.: ligaments, tissues, thin, strong membranes, cartilages, etc.; but also the table-plated epidermides of all the bones, teeth, hair, nails, etc. This element not only forms the very frame-work of animals and trees and plants, but it is plentifully spontaneous in sea-water, and furnishes in laminous coatings the whole family, crustacea, from infusoria to the mammoth bivalves; and beautiful variegations are produced by the layers on shells in the low latitudes. . . . It forms the coats of mail as well as wings of insects. It is in the waters that percolate the ground, and prepares the seven years' locust for its armor, to be carbonized in the sun immediately after his resurrection, . . . . call it *carbo-albuminated phosphide of silicium*. You find nothing of its name or existence or application in any book but mine. . . . You have evidence of its spontaneous existence in silicious springs, not only of the Geyser springs and stream "which so stone-coated the wheels of the mill that the water could not be used for that purpose." . . . And you are sure to find sulphur with that liquor of flint, as you will always find in other like *thermo-hydro-silicious phenomena*. It is the spontaneous solution of quartz, during metamorphic changes; and I have proved before the most scientific men at Boston that *sulphur and carbon* and electricity deprive quartz of its oxygen, and from this condition the silicic acid seizes upon the oxygen and hydrogen (water) and forms into its native hydrous condition (prior to forming the crystalline rocks). For, be it remembered, that four-fifths of the rocks of this globe are quartzose. I mean by the word quartzose, the combination in which we find it.

It is liquid silicates that form the hexagon *tuba capillaire* of all trees, as well as the cellular tissues of our lungs. I have had granted to me an English special diploma, for reproducing wasting tissues (before the ligaments have been carried away). And for my original discovery of the inhalation of the vapors of a balsam taken from an evergreen balsam tree, when in a hydrated condition into transitu in the month of June, . . . before it carbonized into balsam. . . I have it at Milhau's, in this city. I mention this fact to shew that I am practical in my

I have named this excellent  
Article "Transite"

Handwritten signature

discoveries. . . . It is liquid silex that forms the glassy stone coating to your great grandfather's Malacca cane, as well as his bones and teeth. It is quartzose hydrous silicates that cover every spear of grass and every corn stalk, kernel of corn, oats and all cereals. Therefore, oatmeal is one of my many simple elements to build up any late victim to drugs.

A thought of precaution strikes me here, not without foundation. It was several months ago that I had a letter to a "distinguished lung doctor" in this city. There were, (by special appointment), two other physicians present. (After having heard me nearly one hour), one of the said physicians present said "that he had discovered these mistakes some long time since, and that he should prescribe the hydrous silicates of commerce for his patients." "Then sir," said I, "you will surely kill those patients! No, sir! This all important element must be supplied along with the albumen and phosphide of ammonia which always accompany it in the food." I here related the case of the prospector in the interior of Oregon. A geode was thrown down from a high peak, and striking a rock, broke in halves. One of the men being very thirsty, drank the liquor of flint, and died immediately. This was the supernatant liquor of flint left in the cavity of the geode after the crystallizing agents had been absorbed. It is, therefore, necessary for us to know, that while the silicates are taken as food into the stomach of most of the animal organisms, it is necessary to be prepared very fine for the human stomach.

Birds, on the other hand, pick up the quartzose gravel which, (assisted with the silica upon the kernels of corn, oats, etc.,) furnish not only the strong, thin hollow bones of the birds, but their quills and feathers. Now, how? Why and wherefore—the animal and inorganic chemistry of this operation? And why the feathers of the male bird are much more variegated than those of the female? You never saw these things printed in any book before you saw them in mine. I never did . . . I was invited to Boston by Professor Rogers and others, four or five years since, to explain my theories of the origin of the rocks, plants, animals, etc. . . . My theory of what Moses meant to convey as to the length of time (scientifically explained), necessary to a reasonable calculation of the age of our world, etc. More especially with reference to my theory as to sulphur, carbon and electricity, in combined action upon the decomposition

of quartz, and thereby bringing the latter into a hydrate, etc., etc. I related a scientific (original) anecdote, which happily illustrated an important question put to me by Dr. C. T. Jackson, the president presiding, at a regular meeting of the wise men of the American Athens.

The ostrich swallows pebbles and pieces of glass as large as your thumb . . . Two out of the flock of wild turkeys, were shot in the Rocky Mountains; gold specks were found in the gravel and pebbles in their crops. . . . Question? What became of the gold-bearing quartzose gravel in the crops of the dozen turkeys that flew away?

Birds have "quartz-mills" and "digesters;" birds drink but little, and never urinate; they have no urinal organs, while they possess many recipient organs for oxygen, which generate a high degree of heat . . . along with frictional electricity . . . strong ammoniacal solvents for quartz, aided by ammonia, sulphur and carbon. All quartzose gravel and pebbles in the crops of birds are completely dissolved, to form and reproduce their strong, hollow bones, quills and feathers; and, (in obedience to a physiological law in animal development,) in a succession of thin, laminated, cohesive, chemical compounds. Already hardening by the chloride of sodium to chloride of calcium. The latter, with the silica, forms the extreme hardness of all the surfaces of the bones, while all the spongy parts, cartilaginous tissues, strong membranes, etc., remain flexible, by the continued absorption of lymphatic, gelatinous albumen, supplying the bones as well as the softest parts, viz.,—the brain and nervous pulp, with more or less of the generated phosphide, as I shall describe. There is no such thing as "fluoric acid" in the bones; it would act mischievously upon the silica. . . . (The books have also made a mistake in this particular). . . .

Now, why are the feathers of the male bird variegated, as those of the peacock, golden pheasant, and most other male birds? A chicken is to be provided for and sustained. . . . You find sulphur in the yolk of the albuminated ovary. The common shell is a sulphurous carbo-albuminated hydrate of lime; that it may easily decompose during the time and process of incubation, to give easy egress to organized life. You will find, however, a thin, non-conducting membrane, inside the common shell; this is a tough, silicious membrane. You may observe like phenomena in the material texture of the exceedingly thin

membranes, viz.,—Septum lucidum, pia mater and arachnoides, or inner linings of nature's night-cap (or dura mater) of the brain. The purer silicious covering upon the feathers of the male in exceedingly thin laminæ, and the struggle of the rays of light in passing through them, reflect prismatic colors upon our vision.

But to the next question. What became of the gold specks in those quartzose gravel stones in the crops of those turkeys? The solvents aforesaid, do not, in the slightest degree, produce any action upon gold; and the specks of gold are voided amongst the smooth fœces, along with the residuary ammoniacal, alkaline carbonaceous waste; after all the agents of (direct, as well as indirect) life-power for the present vitality had been absorbed. Phosphorus is one of the elements of life-power.

I here produced a chunk-bottle of "liquor of flint," as clear and as colorless as spring water. This article, ladies and gentlemen, is a very superior solution of pure quartz or silica in water, with the silica in much greater excess over every solvent agent than has been known before. I have not taught any living man to make this article. It is too well known all over the scientific world, to be necessary to tell here, that I was the first to dissolve one ton at a time of quartz in water, eleven years ago, making over a thousand gallons at a time. That article which I then introduced as an article of commerce, was very inferior to what I have made since. This article which you see me turn into this tin vessel and put over the lamp, will exhibit the flexible glassy wings of the insects. You see me turn some more from the same bottle, into which I turn a few drops of another equally clear and colorless liquid. By agitating this compound, you now see me cut out from a large tumbler an opal like clear white stone, rapidly hardening. This is not the process by which I cast a white flint statue. It is exhibited here to illustrate what I have been telling you. To understand what constitutes vitality or life-power, we must begin with the origin of matter, viz: The first elements of life-power in gaseous form. To understand all the laws of vital power, we have to retrace creation back to the first three elements of matter, and know how and through what agencies the other three elements were progressively generated; how all originated in a gaseous form, and thence into fluid; thence into semi-crystalline forms; and we must understand, from scientific research, not only these,

but about how long they would require, and by what increased agencies and what laws were progressively generated, and how their simultaneous action produced the first germ of life-power in plants, and through what agencies the alternate progressive changes in the first genera and species, as well as their multitudinous developments, not only in floral life, but of corresponding advancements in animally organized life, from the lowest cell monod and molusk up to the frightful monstrosities composing the Reptilian age, and thence through the second division, or the Mammalian period. If Cuvier or Sir Charles Lyell, or the equally esteemed Professor Agassiz, had applied the same number of years of unparalleled industry to the tracing effects back to causes, *a posteriori ad prius*; to the how and wherefore, the original formation of the rocks, and how, *a priori ad posterius*, and through what progressive agencies the regular steps into organic life. And why the alternate advancements in floral and animal organisms. Upwards through the long Carbonic age of an inconceivable amount of combustive elements which culminated for the sublime change to be explained in these lectures; a change which developed organisms of genus and species that could not have existed in the elements of life during the Reptilian or Carbonic age. They would have discovered that our world, in its progressive processes, has undergone what we may term a double creation, as we shall find. Had Mr. Lyell discovered this fact and the processes, he, in his last publication, could have answered the question put to him by Sir John Herschel, relative to what the latter terms a "mystery of mysteries," viz.: "The replacement of extinct species by other genera and other species." If Sir John Herschel had been as anxious to know how worlds are formed as he was to discover new worlds ready-made, he would not have found it necessary to appeal to Sir Charles Lyell to solve that mystery. God has vouchsafed to man the ability to retrace every step and every element back to its original gaseous condition, and how our nebulous spheroid was formed; not only the origin of inorganic creation, first development of life-power in plants and animals, but also the progressive elementary agencies in the alternate advancement and successive development of genus and species, upwards and onwards in the slow concatenation to what we now behold in all the indescribable varieties of organized life all over the world.

For, be it understood that I am going to shew that *vitality*

or *life-power* is not a mysterious unit, a "something that is not left in the power of human investigation to define."

I shall shew that it is a compound resulting from many elements and agencies, including multitudinous influences, which I shall fully explain in the progressive order, my kind of order, and especially in the summing up of causes and results.

It will be remembered by those who heard my lectures in 1839 and in 1846, and by those physicians who heard my lectures upon Vitality in 1847, and by those who heard my lectures in this city (eight years since) upon the "Original Formation of the Rocks from a Gaseous beginning into an Aqueous Nebulous Spheroid," that I then contended that the primary elements first generated were proto-oxyd of hydrogen and carbon, thence silicic acid, thence sulphide of carbon. . . . The latter-named elements having played a very extensive part, not only in the original formation of crystalline quartz, but in producing infinitudes of changes with the assistance of hydrogen and alternate reaction upon oxygen; thus depriving quartz of its oxygen, bringing it into a hydrated condition, thence into a perfect hydrate of silica, viz.: a perfect chemical solution in water; thus producing a liquor of flint without the aid of an alkaline solvent. The records of my application of this discovery to the arts may be found in the secret archives of the United States Patent Office, filed 1859; proof of which was presented by Professor A. L. Fleury to "Polytechnic Institute," on the evening of the 12th day of March, 1867. This said discovery is also authenticated and proven by those most distinguished French chemists, Fremy and his co-worker Pelouze, of Paris. (See "Traite de Chimie," Volume 1, page 1057.) I mention this for the enlightenment of certain distinguished chemists of New York, who were inquired of in relation to my recent patents for the discovery aforesaid, viz.: the very same distinguished gentlemen who were enquired of twelve years ago "Whether I could dissolve a ton at a time of quartz in water, making a thousand gallons at a time of a superior article of liquor of flint?" The answer was that "None but a crazy man would say it, and that nobody would ever do it." But in less than one year afterwards I dissolved more than a ton of quartz at a time in water, and hundreds of thousands of gallons of liquor of flint have been made in the city of New York every year since. But the liquor of flint that I now make is a very different article, and

which I have never taught any man living to make. If nothing is known or practically done but what is to be derived from the circumscribed limits of *cramped, cute, crude crania* of those (my worthy past *aids* in my long and increasing labors), our progress in science will be slow I think. I am sorry to be driven, in self-defence, to tell these facts. Sarcasm is not a gentlemanly weapon, and I am proverbially good-natured, and would have preferred being spared the necessity of retaliation; but I am compelled to come out with facts. "*Magna est veritas et prevalebit!*"

My principal reason for arranging my lectures in this manner will be better understood by such intelligent ladies and gentlemen as shall have heard all that I shall have had the honor to present, and whose special attention I shall have been honored to enjoy while telling my experience, after many years' trial amongst my fellow-enquirers after truth, some of whom I occasionally find in the "anxious seats, . . . . while others make a wretched choice," and rather swallow the *thistle* productions of the barren fire-theories of the present age. Another tells me that he "don't see any money in it."

They who, but eat, drink, sleep, die,—  
 Will never raise a thought so high;  
 But a mere monkey part will act,  
 Chattering the common dialect,  
 Of gathering cents, with cap and tact,  
 To heap up trash;  
 ——— Leaves but the page  
 Of millions passing from the stage  
 Of merited forgetfulness—  
 That barren crops of like  
 Transmissions may infest  
 A once created Paradise!

The law of hereditary descent and transmission of qualities will be exemplified in my coming lecture upon Ethnology, when amusingly melancholy facts (if I may be allowed such an expression) may be anticipated. But the principal reason for my apparent departure from logical arrangement is to afford myself the advantage of presenting all the elements of life-power in their progressive order, and at the same time to prove, not only my theories in this most special department of my programme, but all the laws of creation with which vitality is inseparably

connected, as will have been seen. While I recapitulate my theories in relation to the formation of the earth, I shall, I trust, be able to prove every grade of accumulation from the first said nebulous spheroid, the origin of the rocks, trees, plants, and animals; from the first separating link between inorganic and organic life; the first lichen, or fern, up through the Carbonic age of floral life, to the vast growths of stalk-formed *Lepidodendri*, etc., and from the first development of animal life, the first *cell* or *monod* to the reptilian *Iguanodon* of 150 feet in length. . . . The transition effort at forming *wings* and *feet*, viz.: *Pteropod*, *Pterodactyl*, . . . . *Plesiosaurus*, from *Plesiosaurii*, following the concatenation up to the Paleozoic climax of the Carbonic age, before the change to Mammalia through the causes to be explained in these lectures. I mean the great culminating causes of the millions of volcanoes that not only destroyed the myriads of those ill-shaped organisms, but generated the materials for a new creation (so to speak). And we shall understand God's indispensable ways and means and length of time necessary to produce a habitation for man.

My attentive audience will have discovered my clearing the way for a more perfect understanding of all the subjects embraced in my programme, especially the origin of the first elements of life-power, and of the hows, whys, and wherefores, the succeeding elements were generated, and the progressive laws of their action, and how these laws themselves were generated.

Be it remembered that the first law of vital-power was generated by the first and continued reciprocal smiles between the sun and our new-born gaseous (thence nebulous) spheroid globe. This embryo *life-power* could not be so named until many thousands of diurnal revolutions; neither a living or breathing animal could have existed, save only in the anticipating, all-seeing, omniscient, watchful eye of Him who is the "great first cause least understood" by our utmost powers of comprehension, with whom and whose comparative power to create a world, is but a breath, as it were, or single fiat of his will, as implied and briefly expressed by Moses in the creative account.

It is, however, within the province of our powers of discernment, and it is also not only our prerogative but our individual duty to learn all the laws by which we live, move, and have a being. I would not repeat these facts, but I am determined to reverse the teachings, not only by professors of therapeutics, but

of many theologians, that, "God never intended that man should know these things; and very many theologians contend, that to study those sciences is antagonistic to, and not within the line of a religious man's duty."

There is nothing so dangerously absurd, as we shall better know by my coming lecture upon the ethnological condition of the different phases which the human race presents this day.

This original law of the beginning of the process of the first element of life-power by the continuous reciprocal action between our rotating nebulous spheroid and the sun, and during a long period (the first creative day or "Yome") of the accumulative increasing action (or effort, would better convey the idea) to form an equilibrium between the earth and sun, which equilibrium, by the way, has never yet formed (and hence our law of sun and storms). Excuse me for these apparent digressions. It is my way of teaching, *multum in parvo*. The peripherical action of our new globe, rotating in space, in obedience to two contending laws. I mean those of centripetal and centrifugal forces. The generating of these two laws are now coming out in my present description of the combined causes of the increasing production of all the combined elementary powers of frictional electricity by the said peripherical action of our said spheroid with the surrounding atmosphere, together with an increasing magnetic electricity as infinitudes of infinitesimally fine molecular atoms accumulated. Hence also the increasing powers of cohesive force and molecular attraction, and hence our first formed spheroid world of nebulae, a rapidly increasing terrestrial magnetic sphere.

I would here remark, that while I am explaining the progressive action and establishment of the first law of heating and being heated, and of cooling and being cooled, and of a progressive formation, or the beginning of what we now term terrestrial in contra-distinction from atmospheric electricity, by the increasing warm smiles of the sun, and the generating reciprocity and molecular attraction and cohesive forces toward the centre of our young mother earth, progressively increased the greatest of all attractions, viz: The attraction of gravitation to the earth's centre. I say, that while I am explaining these beginnings of the creations of the inorganic world, I am, at the same time, explaining our first element or law of *vitality*. To

be well understood here, I repeat, that it was through the rapidly increasing agency of this first-born power, the resulting production of oxygen and carbon, that established the law of cohesive force and attraction, as well as generating sulphurous gases, silicic acidulous vapors, embraced in proto oxyd of hydrogen, formed our nebulous spheroid globe of increasing molecular aggregation of primeval deposit in an amorphous condition. It was this continual aggregation that increased powerful electrodes, that further increased the power of the law of attraction of gravitation to the earth's center, to a degree inconceivable to us, originating as I have stated, by an increased and increasing reciprocal chemical action between our (then embryo) earth and the sun. Here were the beginnings of the generating a law of the first elements of *life-power*, long before the subsequent laws and the materials which resulted into the ultimate production of *man's* life-power, before man could possibly have had an existence.

Albeit, we shall see that every point of progressive creation tended toward this acme of God's purpose; we shall learn other facts in addition to what constitutes life-power in the human organism; facts the knowledge of which may enable us to prolong our lives or shorten them; how woman may continue to blossom as the rose after repeated tornadoes have prostrated her for the time; she rises through the agencies of this first class of the agencies of life-power; the laws and their action. We were just beginning to know something about the first origin of a power which can now be exemplified, and to some extent understood, by observing the fields that the merciless gale had but yesterday passed over, and completely prostrated—floral growths that stand to-day perfectly erect, fresh and healthy, speaking in the breeze in soft whispers the truths of this first law of vital power that now pervades all organized life, whether floral or animated. I wish it specially understood, that when we speak of vitality or life-power, we are speaking of the never ceasing spontaneous effort and action between terrestrial electricity (positive) and atmospheric electricity (negative), and their united play of action or interference with the direct angles of the great solar magnet (the *sun*), and the dynamic changes in the chemical action of the gases, in consequence of the diurnal revolution of the earth; and (in the effort to form an equilibrium), not only

causes the alternate changes of storm and calm, but establishes a daily breathing (a life-power) between the earth and sun and the alternate day and night; also, the alternate atmospheres, viz: The vital air for animals, and the carbon for plants, as well as alternate sleeping and waking of both animals and plants. I make these few remarks of facts evidenced to our thoughtful observation, to prove the combined elements of life-power in all organisms, whether floral or animated.

It is by the alternate action of the laws last described that the processes of decomposition as well as life and reproduction are perpetuated in the vegetable kingdom. Although plants and animals inhale the alternate contrasted atmospheres, they alike depend upon the reciprocal smiles of the sun for the production and reproduction of life power. If you observe an attempt of a potato to grow in your cellar, you will see but a long sickly white sprout—you will also notice the struggle of plants in your conservatory to spontaneously entwine toward the sun's rays. (I elsewhere speak of the grades of animally organized life and motion from the first crystalline germ to the fully developed man). I elsewhere state and prove by comparative induction as well as scientific laws that the light of the sun is as indispensable to the prolongation of the life of a woman as well as a man, as are the elements of oxygen, nitrogen and the food in his or her stomach, and that these are God's medicines in the sick room. It is only in and during eye operations that light of the sun should ever be shut out, and always get a southern room for your sick. Avoid powerful anodynes excepting in extreme emergencies to allay pain, while sensible treatment helps nature through with the trouble. The simplest anodyne for this purpose is an equal combination of tinct. opii ~~sp.~~, chloroform and camphor, once in four or five hours, in small doses. \*One of my objects (and it is an important one) is to show to all not only from whence life power originated, but that it exists in the form of such elements as I have and shall have shown. I shall also fearlessly exhibit the manner in which it has been handled, and the various means of trying to create it by either mineral or concentrated vegetable poisons of the most poisonous character. I hereby pronounce them all as pernicious and destructive to vitality, and should never be used, excepting as aforesaid.

We shall understand by degrees, and soon know, that by the combination of the play of all the laws just explained, and these

*R. F. X*  
 viz. 3ii each: Making together 3vi  
 1/2 oz. fine opii 3ii Chloroform 3ii Sp. Camph 3i  
 Mix & shake well together  
 Dose from 30 to 20 drops every 4 hours  
 Hardinge

acting in combination with the alternate action and reaction of *terrestrial* and *atmospheric* electricity, are caused rounded forms to all organic growths.\*

In other words I briefly say here, that while these contending elements cause plants and trees to shoot up at a right angle, or the 90 degrees of the sun's meridian altitude (there is no other "up" to be recognized, either by a spear or asparagus, or a man, and all may be compared to so many millions of spokes in the wheel of the world). It is these same elementary laws (in an extended form in the exceedingly complicated human organism), which cause carburetted deposits from local diseases to be diverted spontaneously to the surface. If you class this fact with my plan of removing *cancer* and other dangerous affections I speak of elsewhere, you will the better understand me in this particular. And I am at the same time talking about *natural* electricity (so to speak), and how it is to this day produced, in contradistinction from *thermo-electricity*. A grand and awfully sublime illustration of the latter I shall feebly attempt to describe in its action, when I shall have reached the acme of progressive accumulation in an incredible ratio of increase of carbon, preparatory to the vast spontaneous combustive action that closed the carbonaceous age, and produced in the vast geological laboratory at the close of the universal volcanic period the great variety of combinations now represented by our *nomenclature* of minerals and metals, and the deposit of the different salts and compounds with their acids. As electricity had its origin and rapid accumulation in the manner I have described, we shall know how it accumulated in a ratio of vast increase during the whole carbonic age of increasing combustive material, organic and inorganic. This brought about the great change by universal spontaneous combustion. Although these volcanoes were at unequal distances from each other they were sufficiently near to envelope the entire earth with carbonic oxide, and dense masses of smoke from their consuming debris to suffocate the millions of reptilian organisms.

It will have been seen that I have briefly presented an epitome of the results of those first generated elements of life-power.

\* With few exceptions. The pod *Okra* assumes angles in its growth in obedience to a law described elsewhere. A few of the pods will make a dish of mock-turtle soup.—(See Chapter on *Food* in second volume.)

This is to prepare your minds for a perfect comprehension of my theory of *two* grand divisions of progressive creation.

I have not invited you here to rehearse the speculations of La Marck, or Mr. Darwin's *cell* and *development*, or the speculative theories and commentaries of dozens of doctors upon them, either of approval or disapproval. They have all taught us something, but that something amounts to nothing that conduces to throw any light upon the subjects in my programme. I was speaking of a double affinity. This double affinity increases in its geometric forms of development, embracing all the curves in the upper segment of a circle, as well as all the radii of angles from the base to the 90°. You and I and every well-formed tree of the forest are living evidences of a law first spoken of in relation to terrestrial and atmospheric electricity, in direct effort to form an equilibrium. Water is an electrode. You have seen a bowl of water surcharged with electricity. It is static electricity, now. Put the water over the fire. Watch the curved motions it takes. It may be now termed a compound of thermal and static electricity. See, also, the forms of branches and their floral curves upon your windows, suddenly evidencing the result of extreme cold crystallization in obstructed contact with thermal electricity within. The silicious substance, which is the glass, is a non-conductor of electricity. A sudden obstruction to the law of heating and being heated, and of cooling and being cooled, caused these phenomena of crystallization. If you cut off a young thrifty oak, ten or fifteen feet from the ground, you have in like manner caused a war in the laws of combined action between terrestrial and atmospheric electricity, in their effort to form a direct equilibrium, which combine with those laws of dynamic electricity, that produce geometrical circles to the shoots of floral life upwards and outwards, in obedience to the great additional attraction which we shall fully understand.

The oak fibres immediately take a circular motion, and the vital powers along with the well supplied oxygen, carbon, near forty per centum each, the silicic acid and a little hydrogen and other elements, form into large knurls, which, when sawed into veneers and made into dressing cases, present the richest appearances to the man of taste in this department of the arts. The number of saplings which shoot out from the large knurl leave their little circular beginnings in the form of eyes. All these

things were among my A, B, C lessons in vitality long, long ago. Terrestrial electricity, on the other hand, attracts shoots downwards and outwards to receive supplies, not only water, but such other nourishment from mother earth as best suits the appetite of the forming organism, as I illustrated by the shoot from the grape-vine to the bone, to find whether there be any foramina through which to suck out nourishment.

I have lectured upon the simultaneous beginning of instinctive intelligence with the development of life-power, and I wish to so systematize my teachings as to first present creative developments, during the Carbonic age, of very different floral as well as animal organisms from those of the second creation.

I have explained how our globe became a vast magnet, causing the great law of attraction of gravitation to its centre. I have endeavored to prepare the mind to understand (as far as I have gone) relative to the generating of the first laws and their action in the crystallization of the rocks in angles, in accordance with their respective bases, which I shall explain hereafter, when treating upon the second grand division of creation. Suffice it for the present to say that all the floral organisms, during the long period of the three first divisions of creation, were of the stalk-formed growth, beginning with the lowest in the scale or link between organic and inorganic, advancing by a rapid production and reproduction of a carbonic life-power in plants from the first lichen to the stupendous forests of *Lepidodendri* and other huge stalk-formed trees, and also the production and reproduction of carbonaceous life-power, from the first monod up through thousands of years of rapid production and reproduction, because of the rapid decomposition and equally rapid accumulation of sulphuretted hydrogen as well as sulphide of silicium, or sulphide of carbon and ammonia.

Through the agencies already described, all these vast accumulations, formed first into semi-solids as well as solids, with oxygen and hydrogen, formed stagnant lakes with their accompanying islands of the deposits of ages of like accumulations. We can but faintly imagine our world previous to the finishing period of what we now term the Carbonic Age, with its millions of the most hideous as well as most devilish amphibious monstrosities, playing their ferocious pranks in the stagnant fresh-water lakes and miry beds. The *Iguanodon* of from one to two

hundred feet in length, in a fight with a dragon-formed Pterodactyl of his size and like fighting propensities, while multitudes of their like ill-formed neighbors were devouring the thousands of the small fry, Pteropods, Plesiosaurii, etc.

Such were amongst the early developments of animally organized life and corresponding floral increase of the aforesaid capillari-ous stalk formations, with multitudinous absorbents taking their share also of the supernatant liquid rock, (or silex,) or hydrous sulphide of silicium, and depositing same upon their surfaces, in obedience to the vital principle when in embryo, but now established. The large spotted lepidodendron, and the vast variety of broad leaved trees of three hundred feet in height, with others of a like genera and species, long since extinct; save only of their lignite specimens, found in the coal-beds, or in fossilized rock, where they had slept many hundreds of thousands of years, to tell us of that wondrous age of plants, stalk-like trees and animals, deposited together to become fossilized or petrified, in which forms we now behold them; save of their subsequent displacement by volcanic action, the sure cause of which we shall soon learn.

There were, during the close of this second epoch, and during the first half of the third creative day of two-hundred thousand years, an accumulation of hydro-carbon in miry beds and dykes, over which the supernatant liquid quartzose settled, carrying with it floating oxides of minerals, which were so operated upon by the escaping carbonic acid and dynamic electricity, as to finally crystallize into semi-solids, pressing and being pressed by the now established law of gravitation—those hydro-carbonaceous dykes into solid masses, also continually depositing sulphur, nitre and carbon along with other solid matter.

Before those vast masses were solidified, it will be remembered, they were gathered (during their surgings) into islands, by cohesive attraction. These islands being surrounded by vast fresh-water lakes, of the supernatant hydrogen and oxygen still forming water, and throwing off its stagnant vapors, which were as rapidly absorbed by the vast flow already described, continually depositing a surplus of hydro-carbon, until these ocean lakes became vast aquarian gardens, receiving a continuous interchange of the chemical actions of the sun upon the rising vapors, continually producing and reproducing its share of life element.

The decomposition during the many thousands of years, we know, by the progressive increase in size and numbers of these early organisms, animal and vegetable, produced a corresponding increase of carbonic acid and nitrous ammonia; especially when we have the evidence that the family of crustaceous animals began about this time to absorb the supernatant solution of silicic acid, not taken up in the crystalline hardening of the vast quantity of silicic acid with the abundant oxygen and water through the crystalline agents aforesaid. These crustacea multiplied, also, from the minutest infusoria to the mammoth-sized tortoise, and bivalves, such as we now find in low latitudes. No lung-breathing or warm red-blooded creation was there; a mere breathing sack, running longitudinally, or a pair of valves; no finished compound lungs as yet; no abode for God's holy spirit or for man. All appears merciless and devilish in the extreme in organic animal life. But there is a thought of the existence of prismatic colors in the vapors caused by the struggling rays of the sun, whose smiles diurnal had been doing this work for six hundred thousand years. But no angel of God nor disobedient man was there. There was a whisper of eolian enchantment in the putrid atmosphere that swept across the stagnant fresh-water seas. For there was no chloric acid yet. We shall find out how that was generated in the next two hundred thousand years, during which period the rapid reproduction, and equally rapid decomposition of the millions upon millions of such animal and vegetable organisms just described, deposited such an immense amount of debris and semi-organic carbonic oxides, that the ratio of increase of both, and many other agents to form other elements, was beyond description.

No angel of God came yet to report a world suited to heavenly spirits. And yet, all this was in accordance with progressive ways and means to prepare a world for a higher order of organisms. This was an age of wild and awfully wondrous floral growth and lonely grandeur. But no man yet to witness this enchantment! The scene consisted in its solemn loneliness; preparatory to a great coming change. God is creating a world for animal organisms of a higher order of genera and articulations; who could not live or breathe at that stage of the world's creation. Hence a change, from this age of undisturbed accumulation and deposit of the latent combustive material into the

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the

vast universal magazine. When we reflect that all these vastly sublime preparations were to precede a great coming change which was then soon to follow, our reflections deepen, our thoughts tremble within us. Yea, all these, together with the heretofore untold wonders, in the then coming phenomena indescribable. A change which must take place in accordance with those unerring processes of God's immutable laws; and his ways and means to prepare this world for a much higher order of living beings, whose genera and species were destined to be of more complicated and more perfect articulations, for higher and nobler purposes; and hence the necessity of this deposit of combustible materials in the universal magazine. For all was now ready. The omniscient fiat was sounded as if by a few signal guns here and there by spontaneous ignition, and a successive roar burst forth from the fiery throats of hundreds of thousands of volcanoes all over the globe, swallowing in their fiery throats, millions upon millions of acres of the grand and lofty flora, together with the myriads of those hideous reptiles and monsters, as they with dragon-wings, affrighted, leaped and flew, and dropped, suffocated, into the nearest flaming vortex. Who can conceive the awful grandeur, or give any adequate description of the destructive results of God's own artillery? The rolling and seething, and dividing by a rapid and universal succession of those grand and awful convulsions. Piling up the mountain ranges, continents, and sierras; and such of the islands as are now found of primary quartzose rock.

These volcanic ignitions were not exactly simultaneous all over the world, for the combustible materials were far from being equally deposited. The various and varied phenomena caused by them must therefore have been progressive and successive, for reasons described. Had the combustible material been equally deposited, the whole world would have been left in lava. The volcanoes themselves generated their own extinguishers. The now superabundant carbonic and hydrous oxides and other acids, and sulphurous vapors also rose in their white supercilious, or I should rather say, sulphur-cilious triumph above the groveling surges of the multitudinous debris of the now formed and forming mixture of liquid mineral oxides, left for man to name, some length of time afterwards. Our own Dame Nature was then but in embryo. We may at that convulsive period have anticipated the then coming parturition, when but

few tears of crystalline carbon were shed to radiate a lasting remembrance of their virgin purity. We find now in our day of a few hundred thousand years, that Confucius, the renowned Chinese law-giver, shows records of their days of finding diamonds 25,000 years ago. But this digression is of minor importance, and I must ask the company of your clairvoyant imaginations back to find what caused that great event, and what was that great event that the virgin tears were destined to commemorate. We were in the midst of surging seas of elements, midst rolling and seething billows, and surgings of the millions of the unconsumed admixture of the huge monsters that did not come in contact with the thousands and tens of thousands of volcanoes. ~~The~~ Portions of floral life in form of the forests (stalk-formed plants) underwent immediate changes either into stone petrifications or lignites. ~~Palms~~ were also floated off in divisional strata to form subsequent rocks or coal beds. These were also taking their chances for an upper stratum in our globe, while other coming seas of liquid oxides of mixed debris of the forming minerals were also contending for a final resting place amongst liquid talcose and schist, incrusting and parting by intense humid heat. Having shut in any quantity of carbo-hydro-sulphide, produced that now very desirable precious metal, which we now call gold! Muriatic acid was now being distilled and deposited in geological carboys and distracted contortions. The semi-vitreous in contact with the steaming aqueous. The consuming and consumed forests and animals, both in immediate contact, and also at sufficient distances to form sulphuretted hydrogen, while dykes of carburetted sulphide of silicium semi-crystallized with liquid granite syenite, and feldspathic veins, were chemically forming and attempting to sort themselves out while settling down to rest in their general bosom companion, silex, slowly crystallizing while cooling from superheated steam, in continual contact with its surroundings, generating dynamic electricity as one of the crystallizing agents, while other silicious sulphides and other dialyses floated off as supernatant liquid to form the opaque opal, or the projecting, hexagon, elongated, translucent quartz crystals. The carbonate of lime floated off by itself, or tried to do so, while here and there the sulphuric acid escaped and took possession of a small remnant of cream of lime; and gypsum was the result of the marriage. Latent combustive com-

pounds were buried beneath millions of tons pressure, depositing immense quantities of sulphide of carbon and nitre, sufficient of themselves for the non-conducting silicious rocks to hold so long in subjection.

But when we shall learn of the frightful amount of latent heat that was deposited in the formation of the metallic oxides, along with forming and formed minerals, and the fearful amount of static electricity that accumulated during the 600,000 years which have elapsed since the close of the said Carbonic period, we shall not ask for the reasons for increasing earthquakes in divers places. Those millions of volcanoes described were stifled down by their own smoke, which was compounded with the pyroligneous acid, and other acidulous as well as alkaline silicious gases, all being extinguishing agents, which in a common smoke so hugged the whole surface of the globe in thick blackness, as not only to partially extinguish the further violent action of the craters themselves, but obscured entirely any light from the sun; meantime its effect and heat destroyed every living thing that escaped the direct fires by suffocation, imbedding many of their dead organisms in perfect form, to be fossilized side by side with those of such of the then floral kingdom as escaped the immediate action of fire. Many specimens of which in the form of lignite coal and fossil petrification now present to the admiration of the inquiring geologist incontrovertible evidence of the extinct formations that flourished in ages so remote as to seem to defy all powers of computation, by the classification of strata which overlay these deposits, when we consider the terrible magnitude of the surging millions upon millions of acres of the aforesaid carbonaceous forests, along with other millions upon millions of the huge monstrosities (just described) that did not come into direct contact, moving with the vast masses into heterogeneous lamina and chaotic confusion, during the long surgings, and windings, and seethings, and contortions and terrible convulsions, throwing up mountain continents, that "fixed the seas what bounds to keep, and where the hills must stand." Hence the deposit of our coal-fields and the olefant petroleum from the commixtures of olefant gases of the millions of animals with the carbonaceous forests. Hence our lakes of asphaltum and springs of *hdryo-carbonaceous* liquids and inflammable oils. The anthracite is the result of its being in too near contact with heat from the volcanoes, which

deprived it of its bitumen. Silicic acid combined with oxygen and water and a little sulphur, as we find combined with other mineral oxide deposits, with the silica upon an average full 75 per centum in four fifths of the rocky portion of our globe. A vast amount of chloric acid was now generated to form a salt ocean.

X We have the evidences of the long continuance of the volcanic period, and the changes of locality at long intervals, and the opening up from different parts of the ocean beds, as any number of proofs to the eye of every geologist present themselves in every part of the world. The alternate inland strata of nodules, pebbles, and sand long triturated by oceanic action.

Here our inquiry carries us back to the question, whence and by what further means and causes the deposit of all the admixtures of minerals and metals that are now recognized in the long catalogue of geological nomenclature? We must remember the long continuance of the volcanic age which succeeded the long carbonic age. I shall give you my figures for the length of time of each of these grand divisions, then their subdivisions into the *six creative periods of Moses*, and show that in the aggregate of the whole six periods there have been *no millions of years*, nor yet a million and a half—not quite a million and a quarter, but somewhere about 200,000 years to each creative day; making 1,200,000 years as the completed age of the world. During the first part of the volcanic period, and middle part especially of the volcanic age, and thence towards the closing scene which I have tried to describe, every conceivable combination of metallic and mineral deposits were accumulating from those originally amorphous elements which I have named, and were formed into crystalline solids through the combined action of carbon, sulphur, electricity and *thermo-hydro-silicious* combinations with oxides of infinitudes of residuary *debris*, during those long surgings, and seethings, and winding contortions in those boundless caldrons and chemical refining processes which produced gold, silver, platina, etc., deposited in the matrix of the mineral and metallic oxides which first gave them birth, in an amorphous condition not recognizable as gold, or silver, or platinum, until subjected to subsequent volcanic action, accompanied with those ever industrious workers, thermal electricity, etc., they eliminated free gold and nuggets. I will remark here that if you strike two pieces of quartz together, your electrical friction

produces a sulphurous odor. See my *Pamphlet published some time since for gratuitous circulation in California*, among the miners there. The book contained from forty to fifty pages, entitled "The Original Formation of Gold." It tells the miners the important fact, that the gold in its chosen matrix, quartzose sulphuret, is chemically united, and hence cannot be separated except by chemical decomposition.

I have now a patent for dissolving ten tons of quartzose rock in water at a time, precipitate all the gold, and then use the ten thousand gallons of liquor of flint to advantage.

I have proven that the teachings in all the geological schools (of there having been first created sixty-seven primary elements) are entirely erroneous. If I were a teacher of what we call the natural sciences, I would tell the student that gold is not a primary element, but the residuum of sulphur, carbon and silica, and a great number of other oxides, all of which had passed through a destructive process, or what we term a refining process of volcanic action; and there are other equally inexplicable phenomena which the learned world seem not to understand. I allude to metamorphic changes, both accumulative as well as destructive in the wet way, and these have been going on for ages, through the agency of our never ceasing elements, oxygen, electricity, hydrogen, &c. (as I have stated), in the inorganic world, and these elements, with other elements (now to be explained), in the organic world. To what satisfactory purpose our most distinguished geologists have spent so much time in speculating during the last half century (as touching the important announcements embraced in my present lectures), I respectfully submit to an intelligent world to judge, and a true verdict give according to evidence.

Suffice it to say, that our little world again became a vast electric magnet, not only a deposit of static electricity (if you please to admit the term, which, by the way, is scarcely admissible,) but always being generated by that never ceasing worker, *oxygen*, in the great geological laboratory as well as everywhere else. These metamorphic changes are still depositing accumulations of sulphur and nitre, and additional electricity along with the vast amount of other combustive agents, saying nothing of the old carbonaceous deposits, in the form of coal-beds, asphaltum lakes, petroleum and other hydro-carbons, olefiant and other gases. We will please to know that the great geological laboratory is constantly adding again to its already

well-stored magazine; and, as my former publications predicted (and since realized), of "earthquakes in divers places." Yet fear not, my alarmed friend, you and I have time to understand these subjects that so much conduce to our individual well-being. I will repeat here my disclaimer against our globe being an "incandescent molten mass of fired lava," with a crust of forty or eighty, or any other number of miles in thickness; but that ignition only exists where fissures admit communication of oxygenated gas from other cavities that communicate with the earth's surface; and these cavities are increasing as minerals decompose, and as metals oxydize; and that all these causes will increase until the final consummation of the result of these scientific causes (as presented in my former lectures, years ago, and printed also in my early publications); so I am not just beginning my long lessons upon these, to me familiar subjects. The all important great portentous question here arises—When will the final consummation take place? When the "elements shall melt with fervent heat," I do not know exactly, but this fact I do know, we are hearing of "earthquakes in divers places," and they are "increasing." And earthquakes will "increase in divers places," as a sequence.

But it may be many years before the bursting out of volcanoes in a universal responding roar of God's artillery, encircling and enveloping the earth with a dense commixture of carbonic oxide that will destroy all living organisms, and revolutionize inorganic matter. There is no knowing to what extent. It may entirely be melted "with fervent-heat," into a homogeneous incandescent ball of lava, "rolled together like a scroll," to rotate in space, and become a star of small magnitude to be discovered by men and women of other worlds as intelligent about world-making, perhaps, as the best of us here, even in New-York.

I will here state, that thirteen years ago, I proved the fact that sulphide of carbon has played an extensive part, not only in the original formation of our quartzose earth, in producing infinitudes of changes, with assistance of hydrogen, and alternate reaction by oxygen. And that quartz may be again acted upon and deprived of its oxygen, and brought into a hydrated condition, thence into a perfectly chemical solution in water. See my records in the Archives of the U. S. patent office in 1859, witnessed by Professor A. L. Fleury, who stated the fact

before the members of the New-York Polytechnic Society, on the evening of 12th March, 1867. My said discovery is also reported with favor by those most distinguished savans of Paris, France ; mentioned elsewhere.

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## PART SECOND.

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### PRESENTING A CORRECT TRANSLATION OF THE MOSAIC ACCOUNT OF CREATION :

Perfectly Harmonizing with my SCIENTIFIC THEORIES, and their PROGRESSIVE RESULTS, as described in the following (as well as in the foregoing) pages. Also, PER CONTRA :

I shall, as in duty bound, call attention in the following pages to the wildest, the most vague and incongruous nonsensical theories recently taught in this city (and reported all over the United States), with reference to the *Creation and Age* of our earth.

Comment is unnecessary—read for yourselves—the proofs are in the city of New-York by the thousands.

The Carbonic Age is now a common expression among many geologists, and very properly so ; for the expression itself implies another age which is termed the Mammalian age.

I believe that I am the only one who has marked the periodical line of those two distinct periods of creation by the closing of the Carbonic age, by the grand universal destruction of every species of animal and vegetable life, and in the manner in which I have described. I have, therefore, divided the six creative days into two grand divisions of 600,000 years each, as afore-said. It matters but little to the important object of these lectures how near right I may be as to my calculations of time for the creative processes which I have described.

I now proceed to notice such further grades of developments

in the second grand division of creation as are indispensable to a full understanding of the most important objects and purposes of these lectures, viz: The production and reproduction of vitality or life-power in the human economy, as also to correct wild mistakes in relation to the age of the world.

I have presented evidences of similarity in the first developments of life-power from those causes already fully described in the primitive elementary creative processes.

These first physical causes are to be seen by powerful microscopic aid, and as much proven in a single drop of rain-water, or upon a single leaf you discover a little inhabited world of perfectly formed animals not visible with the naked eye; and while these original elements were sufficient for a low type of animal organisms, whose life and existence were and are sustained by carburetted hydrogen more than nitrogenized oxygen, and like millions of scavengers, existing in the air which we inhale, acting the part of other decarbonizing agents than those I have before explained. Yet, with all that I have so far shown in my full explanations of the processes of accumulation, up through those long periods, to the close of the Carbonic age, and, in order to a perfect understanding of the necessity of the newly created elements for the new developments of a more compound creation of genus Mammalia of perfectly formed lung-breathing, warm-blooded animals, I need not recapitulate my theory of the first formed gaseous elements into a nebulous spheroid, and the generated laws of cohesive force and attraction, and every additional law, and how spontaneously generated for simultaneous action. Suffice, now, to say, that those primary elements are still the commanders-in-chief in the great transition to the second creation, so to speak. I have alluded to these points in a retrograde way to prepare our minds for a perfect reconciliation to the Mosaic account; for of all subjects this day, and the beclouded opinions now extant, caused by muddy-headed teachers, of the creation of this world, none is suffering more, and making more infidels than this:

Now, let us see what the divinely inspired recorder says in the few sentences with reference to the creation in the first of the Genesis—the translation also: “In six days God created the heavens and the earth, &c.” The “heavens,” so far as the creation of our earth is dependent upon the celestial planets for her springing into a continuance of existence. “In six days,” &c.

The word days is translated from the Hebrew word, "*yomim*," which is the plural of the word "*yome*." The latter word signifies one indefinite period of time; and in the Hebrew record of Moses, it thus says, six indefinite periods of time. And in order to a full comprehension of the translation "Let there be light and light was," are phenomena fully explained in my former chapter, as are also those of alternate day and night. . . . "Out of the dust of the ground He created man." If we give a chemical translation of dust, we find it is composed of nearly all the elements of the physical creation, and all the periods of time which I have described (and no more) were necessary. "He breathed into his nostrils the breath of life, and he became a living soul." This was also one of those powerful double implied expressions peculiar to the Hebrew. It embraced not only the physical breathing of the new formed atmosphere, suited to the perfect organism, but also the psychological spirit, mind and soul, recognizing man as the special, finished work. A double organism; the culminating acme of all the rest of God's creative purposes, not only in majestic form erect, but with anterior sentimental brow of high and noble bearing (I am speaking of the first original pair), a distinct type (genus *Homo*). "In his own image, male and female, created He them, and blessed them, and called their name Adam."

It will be noticed here that Eve's name was Adam also. A lecture upon the origin and process of the art of speech and of recording language would be in special keeping here, but it is not in my present programme. Suffice it to say for the present that the inspired recorder in the first of the Genesis used such terms of signification as the (then sparseness of) words in the Hebrew language would best present the record. The word "*image*" was not a correct literal translation; but, I trust we all know, it was intended to express man's susceptibilities of those superior endowments, the progressive developments of which, during our life of probation, may lead us into a participation of God's holy spirit, and, by his written word, aided by a cultivated inherent inquiry, guided by every necessary index around us, to look from Nature's course to Nature's God. Man was created a progressive being from his cradle to his grave. And although the time allotted to him is long enough for his physical development, it is indeed short enough for his intellectual maturity. The word "*image*" was not well chosen. The

word in the original Hebrew, as we all know, implied man's superior susceptibilities of intellectual development from his cradle to the meridian of his progressive life of a hundred and fifty years at least, with a due exercise of his senses with the external world around him. And all nature presents every possible index in the exercise of man's original innate incentives to prove all things *a posteriori ad prius*; taking no man's *ipse dixit* upon any important subject, especially those which we now call the most abstruse. God has endowed man with progressive powers, *ad infinitum*, that he may both understand the laws of his own being and their connection with the earth he inhabits.

Man is a progressive being from his cradle to his grave. And all he can ever be or ever know must result from the exercise of his senses, in obedience to the injunction of his creator, God. In other words, not be too lazy to do his own thinking, his own reasoning, and his own proving.

All the lower animals are endowed with certain prescribed limited instincts, each in accordance with its respective peculiarity of organism and special adaptation to locality, climate, etc.; and they never depend upon man's opinions. Hence they never make mistakes, especially in their hygienic department.

They discriminate between the harmless and the poisonous plants. They need no schools to teach them either the poisons or their antidotes. While man is sent into the world the most helpless and most dependent for years upon his guides, his embryo opinions—be they what they may.

Man is thus the creature of circumstances: First, where he happens to be born; secondly, transmitted qualities; thirdly, his master's teachings. All, in every opposite locality, contending for truth and common sense. But the traveller will find that what is truth and common sense in one locality is nonsense in another, whether in religion, law, medicine, or politics. Whether to become something or nothing; a divine or an exchange broker, a lawgiver or a highwayman, a peddler or a poet, philosopher or a clown, a hermit or a dandy; all through the various phases of human development of soul or mind; for I deal in a synonymous term for this first superior attribute vouchsafed by God to man. And He breathed into his recipient powers of partaking of God's holiness, and man became "a living soul." But what is the record afterwards? Alas! sad, indeed, is the

reflection which my coming lecture upon Ethnology will sufficiently explain, not only of man's past derelictions and the causes of the present variety of castes, phases, and infinitudes of shades (moral and physical) of anomalies presented by the human race at the present day. . . . . It is all those considerations as well as other causes of deterioration, the most alarming of which specially prompt my determined interference.

Therefore, why think it strange? for it is no less strange than true, that every learned philosopher you inquire of concerning man and the earth he inhabits, will tell you in plain terms, "Nothing has as yet been either satisfactorily taught or known," not only in relation to the original formation of the earth, aggregation and development of inorganic matter, but of what is still more desirable for us all to know. We are in the dark as to the elements which conduce to that all-important question embraced in my programme, viz.: "Vitality or Life-Power." The original progressively generated laws and their agencies in producing the germinating principle, *a priori*. Moses, in his inspired record, saw the new-born earth enveloped in a dense smoke, when he said, "A mist went up from the earth."

He saw the free "gold in Havilah" deposited by the refining volcanic action, and spoke of it immediately in connection in the first of the Genesis. Why did Moses speak of "good gold in Havilah?" Because he knew that all the metals for use of man were the result of universal volcanoes—that there had been "no sixty-seven primary metallic elements;" and that gold was the residuary deposit of the refining process of oxidation and spontaneous chemical action in the great geological laboratory; that deposited gold, not only in an amorphous condition, but free gold; and nuggets, few and far between. And, hence Moses said "good gold" was deposited \* \* He had just been speaking of the smoke of the great universal millions of volcanoes. "A mist went up from the earth." And yet our wiseacres will talk about "sixty-seven primary elements."

Moses saw in his vision of the creation, the unwrapping of the swaddling garment that had for a long time hid our new-born earth from the light of the sun, whose reciprocal interchanged smiles upon our then dark, rotating earth, were indispensable for regular alternate "day" and "night," for the chemical production of the process of the earth's alternate inhalation and expiration every twenty-four hours, establishing

the regular alternate production of the two breathing compound atmospheres, viz: the nitrogenized oxygen for the new created, perfectly organized, lung-breathing, warm-blooded animals, and for man in particular; and the carbonized ammoniacal atmosphere for the inhalation, development and growth of plants, trees and all floral life.

I would here suggest a correction in the translation of what Moses meant by introducing the word "*onyx*," in his creative record. *Onyx* is the Hebrew word for a horn or nail, the laminated formation in the growth of all animals of *genus mammalia*; and it has been from these different lamina that the word onyx is applied to stone of the Chalcedonic kind, found in thin laminous deposits, black and white, and sometimes a pinkish red or neutral tints. That with the red layer is called sardonyx. Moses saw in his vision the progressive developments of horned and hooved quadrupeds of kindly-yielding dispositions, for man's domestic control, use and support. The trees, also, of the new creation grow in concentric layers, marking the seasons. It was then "the morning stars sang together," and all promised progressive perfection.

Moses saw the how, why and wherefore with "herbs and plants and flowery birth" our "naked globe was crowned;" and how the "rain did bless the earth," and the sun did "warm the ground"—and how

"The gaudy rising sun the wide horizon gilds,  
Came glittering o'er the silver streams and cheered the dewy fields,  
And how, dispensing vernal sweets, the morning breezes play,  
And how the birds with cheerful songs salute the new-born day."

And how a paradise was prepared for the great culminating acme of God's whole creative purposes. As I stated in the opening of these Lectures, and as we are all both directly and indirectly, materially and immaterially, morally and physically interested in this said special finished double organism of God's great creation, Man, as a physically, as well as mentally organized being, will be specially attended to, in accordance with my announcements of these lectures in the newspapers.

I have abundant evidence of the superiority of the intelligence of Moses, corroborative of the records of Holy Writ, if I had time to dwell upon this important part of our subject. We may well have cause to mourn over the barren waste and

deterioration of much more than we feel willing to concede of the majesty of conceptions of the earliest races of mankind. I have no time to dwell here upon the "Lost Arts." Our capitol, at Washington, would only be suitable for a porch to a building in ruins (upon the margin of the Nile), one mile in length; "each column of which is enough for the minds-eye to reflect upon for a week;" so says Champollion! This was a library, built by one of the Pharoahs, where Moses was educated.

Will any theologian presume again to tell his congregation, that the great "Doctor Aristocratos or Professor Anybody, knows more about the creation of the world than Moses could have had the facilities for knowing?" Verily we are getting "wise above what is written!" Moses saw in his vision that when that "mist went up from the earth," a new nitrogenized atmosphere was being generated for the coming mammalian race; all with perfectly formed lungs, to receive and decarbonize and purify a newly generated vital fluid; and he classified all the new developments of genus and species. For he was taught in all the arts, and in the abstrusities of all the natural sciences of the Egyptians. I hope that when the wise men of this intelligent age attempt to tell us how little Moses knew, that they will please to send them to me. I shall extend to them the "right hand of fellowship;" having been often tried by sceptics, and ready to be tried again. Perhaps I may meet a brother who will "cheer me with a brother's page." There is one fact to encourage me in my long and ardent labors in search of truth upon all these neglected, though most important of all subjects, and that is, the most profound scholars in Europe and America, seem to appreciate my reports of my long, untiring labors in all these heretofore most abstruse of all subjects.

I published a pamphlet of some forty to fifty octavo pages, entitled "The Original Formation of Gold," and how it became deposited in quartzose sulphurets. I have a copy here. They are not for sale; but may be introduced into an Encyclopædia, that I am preparing, for publication perhaps, before I die.

I lectured eight years since in this city, upon the "Original Formation of the Earth—Origin of the Rocks, from a Gaseous Beginning," as aforesaid; and I am now recapitulating my said lectures here. I find many inclined to unlearn the mass of wild contradictory theories extant upon these subjects. I refer

this audience to those whose letters (of correspondence upon these subjects) indicate, not only their approbation, but the evidence of the originality of my theories. I saw Dr. "Irenæus" Prime, at one of my lectures, (eight years since,) in this city. See his comments in the *N. Y. Observer*. The lecture was upon The Original Formation of the Earth; Origin of the Rocks, Plants and Animals, etc., etc., from a Gaseous Origin. I refer also, to "Mr. Dana," (now editor of *The Sun*,) for my promulgated aqueous theory of the Origin of the Rocks, occupying four and a half columns of one of the largest journals in the city in 1857, thirteen years since. I give data for the special notice of certain plagiarists, whose propensities for picking and retailing, are happily hit by "Moore."

"In the woods of the north there are insects that prey,  
On the brains of the elk, till his very last sigh;  
Oh! genius, thy patrons more cruel than they,  
First feed on thy brains, then leave thee to die!"

My reasons for introducing the sentimental, as well as other unusually varied illustrations into my scientific lectures, are to relieve the main points from dryness; for to many minds the more abstruse scientific subjects are not so interesting as they should be. And my somewhat imposing bill of fare, embracing all creation, affords me full latitude for copious extras and side dishes, as well as exotics, digenous and indigenious, into my desert—with a few wild flowers of rhetorical figures of spontaneous rural growth besides some capricious cascade or lonely still lake, where the rainbow dipped its first arch of prismatic significant remembrance. For we have found such a period of the creative process, before a sufficiency of chloric acid was generated to form a briny ocean. . . . .

Before I take my departure from that beacon-light of hope, that has cheered many an outward-bound sea-wearied explorer before me, I promise interesting remarks from my log-book, as well as to correct my traverse-table and dead-reckoning by the meridian sun of scientific observation during the late complete voyage of discovery of much that we may do well to yet know of this little world of ours, about which so little has been really known. It is but a little world (compared with Jupiter), but I have found it big enough to understand. Hav'nt you? And yet I feel myself fully prepared to prove all I shall

present, or shall have presented, in accordance with my programme, and I solicit that none will make up his, or her, mind with reference to my theories until he, or she, shall have heard me through. This would not only be injudicious, so far as I am concerned, but you would still be left upon the ocean of uncertainty in regard to these important subjects, about which (should I appear to be mistaken at any point) I am open to correction. Knowing, as we all do that no human being is infallible, (except the Pope!) especially when men known to fame have presented us with such mistaken theories of creation, and from whose decision (upon what I shall have promulgated) upon these subjects, I should appeal (by "certiorari") to a much higher court of intelligence.

"Solitary and alone" I set my (gaseous theory, spheroid) "ball in motion," and protested against the fire-ball theory of Thompson, and all other Plutonic theories extant upon the origin of the earth, or there having been "sixty-seven original elements," or that our globe was created in six-sevenths of a week, as millions yet believe, because of human ignorance in the translation.

I here protest against the theory of "worlds, large and small, being thrown off from the sun by centrifugal force," . . . . . to rotate "400,000 years before a surface was sufficiently cool to invite earthy aggregation to start vegetation." This theory was started in Glasgow (seventeen years since) by a man by the name of Thompson, who "computed his cooling process by comparing the time that it took the heaviest casting, at Woolwich, England, to cool." The gentleman who has been teaching this theory in New York, (and various other places ever since,) was, about sixteen years ago, rehearsing from the (then just published) gatherings of the industrious and lamented Hugh Miller's "Testimony of the Rocks," the diagrams of whose gatherings were copied and sketched upon a large scale on white cotton, and were being exhibited to 3,000 of the choicest intelligences of the city, by very inviting advertisements (with Hugh Miller's name left out). All went on smoothly, by the aid of good memory, excepting in the rehearsal of two words in a sentence, where Hugh Miller (while in studious reflection upon the great metamorphic changes and volcanic upheavings and displacements of the lower strata to the surface) exclaimed, "This globe must have rotated countless ages of time." Our said plagiarist

made a little mistake in quoting, and said: "This world must have rotated in space *countless millions of years!*" I had just before received a copy of Hugh Miller's "Testimony of the Rocks." A French chemist who sat by my side looked about to see the effect upon the three thousand, and especially upon the chosen committee upon the watch towers of science in the great city of New York. I was amused to see the expression so willingly swallowed, even by Peter, the great and good philanthropist himself, whose dilated eyes had met those of the audience as he was reconnoitering the well filled seats in the (then) just finished amphitheatre—"contiguere omnes intentique ora tenebant!" But the learned lecturer by this startling discovery established the profoundest confidence in the opinion of himself, on the part of said committee, and he has been frequently called ever since to astonish the natives of the city of New York upon the subject of "world making," by showing up Thompson's fire-ball theory, by a fire-color disk of about five feet in diameter, the edge of which exhibiting the earth's crust of "from forty to eighty miles in thickness," claiming the theories of some that our "earth is an incandescent mass of molten lava." It is unnecessary for me here at this moment to enter my protest against this latter-named theory, as you will have seen in my proofs of progressive creation that this is not so. Another, in his lectures this winter upon the creation of our earth, talked of "an indefinite number of millions of years," while the closing lecture upon this subject, at Steinway Hall, a few weeks since, has given recent "European authority that 350,000,000 (three hundred and fifty millions) of years is the exact age of our earth by scientific calculations." I shall show the sum total of the six periods of time, (from the first spheroid rotation of our globe to the present time), to be about 1,200,000 (*twelve hundred thousand years*). And I have presented the progressive processes from whence I come to about those figures. Whether my figures are anywhere near or not, my theories of the processes will not be questioned by any man of scientific reasoning. I had long been in hopes that Sir Charles Lyell, or Prof. Agassiz, or some other of our distinguished geologists of recent time would have given us their ideas about the original formation of the earth; the origin of the rocks, trees, plants and animals. One thing I have noticed in the books of the most industrious

scientific men that the last century has produced, that evidenced to me that they were men who did their own thinking, and came to their own conclusions from close study and observation of Nature's productions, and read her great book by her own index. That they saw evidence at every step of the fallacy of the Plutonic theory of creation as taught in the schools, and so taught to this day. They found water in the middle of quartz crystals and in the *cavities of Geodes*, and discovered water in the molecular divisions of granite rock; and the *aqueous*, instead of the modern fire-ball theories, is evidenced by every geologist who has done his own thinking.

Sir Humphrey Davy was an original thinker, and the scientific world has profited by it in many particulars. He contended for the aqueous instead of igneous formation of the earth. This was also the opinion of David Brewster, and Dauree, and Saussure, and Pallas and Werner (see *Werner's Geognomy*). See also Bischoff's publications these last twenty-five years.

But neither of these industrious stars in the scientific galaxy have given us their conclusions as to the *how, why* and *wherefore* of the *origin of matter*; the *formation of the earth into nebulae*, or anything about the original formation of the earth from a *gaseous origin*, or of the first formation of the *rocks, plants and animals*; the *how, why, and the progressive developments of floral or animally organized life*.

Neither has that most excellent, the most distinguished Prof. Agassiz, or his equally worthy and distinguished contemporary, Sir Charles Lyell, favored us with their conclusions in relation to the original formation of the earth, origin of inorganic or organic matter, or of the *elements of vitality or life-power*.

Hence our American "world-makers" are either driven back to the ring of Laplace, or the fire-ball theory of Thompson, and somebody's guess work as to the age of this little world of ours.

I think it is high time that text-books upon these special subjects should be forthcoming, especially when we hear a clergyman of the Andover School of Theology say, as one said in his pulpit recently, telling his congregation, in a popular church (corner of Fifth Avenue and ——— Street, New York City) that "he should adopt the figures of Professor ——— for the time or age of the world, to be 'an indefinite number of millions of years.'"

As "the Professor who was then lecturing is a very profound

scientific man, and possessed facilities of knowing more about such things than Moses," the inspired recorder of the creation! It would have been better, for the credit of his *alma mater*, to have taught said clergyman that the literal translation should have been construed, and explained by the commentators thus: Moses wrote, as was his custom, in the briefest style of the Hebrew, and in the metaphorical manner taught him by the *Hierogrammati*, who were kept by the Pharaohs to teach and explain the richest allegorical language of representation in the briefest, as well as in the most sublime figurative expressions; not alone on account of the sparseness of words then in use in the Hebrew, but because of the then long-established usage of an implied judgment on the part of the recipient of either oral or written language to decipher or construe, according to the connecting facts or circumstances. . . . . A style beautifully exemplified in the Old Testament. The translation in some cases would very much conflict with our present cold matter-of-fact rules of writing and speaking. Moses used the Hebrew word, *yome*, which meant, in his account, a period of (indefinite) time; also, *yomim*, in the plural; yet these words also expressed the word *day* and *days*; and the word *yome*, in all the Hebrew records, reads—an indefinite division or period of time. The expression of the verb and noun also, in describing Adam and Eve, in accordance with the usage of the learned and inspired Moses, implied much more than a single one idea, viz.: "And called their name Adam," from the Hebrew common noun, *Adme* (or red clay, arable soil of Egypt). And, as a prelude to my explanation of the Mosaic account of creation (that will come up in its order), we should remember that Moses was skilled in all that belonged to the sublime in the arts, in speech and of recording language. He was taught by the *Hierogrammati* of Egypt. Those profound scholars and priests were kept by the Pharaohs to teach the richest allegorical modes of speech—the language of representation. And was in accordance with one of the most distinguishing attributes vouchsafed by our Great Creator to man, not only by the spontaneous attributes of comparative induction in the process of thought, reflection, and progressive reasoning, but speaking and writing by similitudes and allegorical symbols. The first attempt to embody thoughts and connecting ideas was by hieroglyphical figures, either mark-

ed or scratched on such crude materials as were susceptible of graphic record ; gradually opening the way into symbolic associations of comparative things and compound ideas of God and man, nature and art, etc. New germs of the inherent poetical attribute of inspiration sprang up and seized upon symbolical associations with other ideas. The higher attributes of the human soul were thus expanded, and inventive genius found play for its wonted action, until all that we can now find in the debris of the extreme past, that the "wizard Time" has spared us, as evidences of the sublime in speech, in the arts, and in Biblical record, were the legitimate offspring of those marked superior attributes vouchsafed to man. Poetry, Painting, Music and Language were deified in Grecian mythology as the four daughters of *Mnemosyne* (Goddess of Memory). . . . .

The custom of the ancients to personify insensible objects, and also of having some special similitude or attribute or definite meaning in the naming a person, has been handed down to some of the nations of the earth to the present time.

It may be true of our native Americans (I mean the Indians, the aborigines), that they are "the descendants of the lost tribes of Judah—the Ishmaelites of America—whose ancestors it is said crossed over from Asia on the ice of Behring's Straits."

For they evidence one of the attributes I have been talking about, and that is naming a young Indian in keeping with a peculiarity, connected or implied. Red Cloud, that uncouth, unlettered Indian warrior-chief, gave striking evidence of spontaneous native eloquence in a very few words a week or two since at the Cooper Institute. He told his audience that he was a minister, fully commissioned by diplomatic authority from the aborigines, the rightful owners of the whole country ; that the Great Spirit, and the sun, moon and stars, and all the Rocky Mountains and the Mississippi and the North River, and all that is really great and vast, and wild and wonderful in power, were his endorsing witnesses ; that the thousands around him must acknowledge his pre-emption right, and that in God and nature there is harmony and no mistakes. But he was sorry to say, that "white man is very unsartin."

There may be more truth than poetry in his last implied rebuke, but excuse me, this comes more properly under the head of Ethnology, Phrenology, Psychology and other ologies.

I was speaking of a natural propensity to name men and

things, by associating some natural development, either physical or moral, of men, in all ages, and so with the English now, as well as in the days of "Richard Cœur de Leon," and so in Greece at its palmy days. Plato's first name was Aristocles, until his highly developed intellect, high marble forehead and anterior brain claimed and received the name of "Plato," which means greatness.

And the study of man among the Athenians was the climax of all studies. The motto chiselled into the granite in the temple-gates, was "*Nothe se Autona*"

In retracing the origin and process of the art of speech, we should be fired with a new source of the sublimest admiration. I should be delighted to spend an hour upon this subject at any time. At the close of that hour we should find ourselves the slaves and dupes of a very accidental, arbitrary, perplexingly long, and tediously elaborate mode of recording language, inconsistent in rule and pretended system, of writing and printing, what we call "orthography, etymology, syntax and prosody." I could convince you all of this fact by using that black-board only fifteen minutes. All the consolation I can offer is, that to know these facts, is learning, and to endure them is stoicism! I discovered the trouble many years ago, and adopted a corrective for my own use. I have it engraved for myself and special friends. It has long afforded me a gratifying saving of much time and labor, and in my early enthusiasm I appealed in vain to college presidents and others to join me in the attempt at a complete revolution in writing and printing; a universal system of representatives of articulation and sound, formed by the organs of speech. But nobody cared about it, and I was (against my very nature) compelled to learn that great necessary secret of caring for nobody. I find it a tough lesson. Somebody else tried the phonetic experiment afterwards, but the system being unfortunately exceptionable, has not been adopted, excepting only for private purposes of brevity; whereas, my system, like music, is, in very deed, "phonetic," and specially adapted to teaching elocution.

My time and labors the last thirty years of my life have been ardently devoted to practical experiments, in proving my discoveries in the physical sciences, the results of which call me out at this late period of my life; and whenever it shall be pro-

ven that I am not perfectly familiar with my subjects, or, that I cannot present proofs irrefragable of what I shall have presented to the wisest men of (any American) Athens, or, of Europe, then and not until then, will I ever after hold my peace, for I must necessarily be a great disturber of bandaged, sleeping sentinels upon the watch-tower of science. Just such as have figured in all time; before whom, and whose presumptive power many a Galileo has had to be arraigned. Newly discovered truths find their greatest enemies among ignorant leaders of hoodwinked followers. The misfortune is, (as it has been in all time,) the masses of the people are too lazy to do their own thinking, and there is nothing easier than for the veriest charlatan of astute calibre to become a *bell-wether*, in any department of human thought, upon all subjects that require individual study and close analytical investigation. Hence, the present portentous condition of the city of New York. So, also, in the department of religion; the world has always a "Joe Smith," and his thousands of misguided dupes, to the belief of the "gold plates, (dug out of the hill,) and that these gold plates were covered with hieroglyphics, that none but 'Joe' and one other of like astute calibre could decipher." The greater the marvel, the more the ignorant masses are attracted, and so with the "fire-ball," and magic lantern teachings of world-making.

When "Peter (the great and good) Cooper," built the "Institute" bearing his philanthropic name down to posterity, his intentions were to unfold truth before the inquiring eyes of the rising generation, in accordance with his patriotic zeal for the advancement of the intellects of his beloved country, knowing that intelligence only can save the republic.

He had seen his old hallowed word, "*democracy*," fall into another prefix, viz: *demon*, and he now sees his portentous fears being rapidly verified. The word *demos* means demon now, and *demi-gogus* means to lead to demon (the devil), the *demos* (the people) beginning here, not at Jerusalem, nor any longer New York, but New Cork! Ah! my respected friend, I should have been happy to have found in you my venerable ward.

Do you remember, Mr. Peter Cooper, that some fifteen or sixteen years ago I called your attention to the artificial stone "*terra cotta*" arches (which were then going into the "Institute"); that I crumbled them with my knife blade, and that I told you of my intention to make a thousand gallons at a time

of liquid quartz, with which I could fully saturate those arches and make granite of them, and that you immediately inquired of two of the most renowned chemists in the city of New York, and their answer? and not only their answer, but the answers of others equally known to fame! "That any man who talks about dissolving a ton at a time of quartz in water, must be insane;" and you, of course, believed them. But I have since dissolved a ton of quartz at a time in water, and the liquor of flint is now an article of commerce, and your arches will crumble down for want of attention to my preventive; for I have a crystallizing agent of my own make, of liquor of flint, that I never have taught to any man living.

I could have then told you, sir, that although we can well afford to have Hugh Miller's Testimony of the Rocks; and Doctor Lardner's theories "of light and heat," and all other real enlightenment from the East rehearsed again and again in New York city, albeit, the lecturers forget to name the authors. But Thompson's fire-ball theory of "world making," savors a little too much of genus salamander, even in New York city, where the capacity to swallow may be aptly typified by the anaconda of South America. Again, we have been so accustomed to look to the East for light; and this is well for most purposes.

But I have noticed that upon all subjects that require long study, by those wishing to pass as tolerably well posted in the ranks of scientific men, the brains of European workers, thinkers, and writers are continually being picked out. As, "in the woods of the North there are insects that prey on the brain of the elk;" . . . . . so we find upon the subjects before us, our wiseacres have got lost in the fog, without the sunlight of science to correct the dead-reckoning of wild and random figures and mistaken quotations of the lamented Hugh Miller's guess-work, Thompson's fire-ball, La Place's ring, or somebody else's random shots at the sun, so that with "world-making" as with the mechanic arts, we had rather import and pay the heaviest penalty, *ad valorem*, than work ourselves. But in our importations of theories of "world-making," the most egregious extravaganza and wildest nonsense that could possibly be conceived of have been taught to the people of the United States for the last thirteen years, either regularly imported through the Cooper Institute custom-house, or smuggled in and palmed off

as the results of an original explorer in the geological formation of the earth and in paleontology, exhibiting Cuvier's great paleozoic monstrosity, the *Magnatherium* petrefaction, found by Cuvier in South America, exhibited in a drawing thrown upon a magnified disk by a magic lantern, along with a variety of dissolving views to the profoundest satisfaction of the great public's grown children.

To present a full and complete geographical finish to our subject of creation, I should now proceed not only with the development of such of the animal organisms and vegetable growths as the new elements produced, and their alternate advancements during the last long Tertiary period, or the last creative day of the Mosaic account, and all the metamorphic changes of the rocky formations and the physical causes, including our subject of Ethnology, Anthropology, Phrenology and Psychology of that finishing part of creation expressed in a word of three letters, viz: M-A-N. We have reached him as heading the new genera and new species, a type distinct, to lord it over all the rest of creation, and especially over himself, the latter being his special prerogative. Therefore, stand thou near at hand with me, my Man. We shall attend to your case and mine with all due respect, loving kindness and a great deal of that which is most wanted, viz: charity. *Fiat justitia ruat cælum!* For we shall find that there have been great metamorphosic changes in man, as well as vast changes in rocks. And now for the How? Why? Wherefore?

The metamorphic changes which the rocks have undergone during the whole Post-tertiary period up to the present time have been by the following causes: 1st. By remaining volcanoes since the last universal change, already fully described. 2nd. By the transportation of broken fragments (thus thrown off) by glacial and tidal powers; and these causes increased by additional prior causes, viz: changing zones by long ages of the continued sidereal motion of the earth.

How long were the ages? and how many of them? Have we no record? Yes, Dame Nature points her finger again from effects back to causes. The books upon this part of our subject, also, are exceedingly indefinite and contradictory, especially as to time. All the authors indulge alike in millions of years, wholesale; no smaller measure. I fully appreciate your long

industrial labors, gentlemen. I have read all your reports with great "expectations," and your theories as to time, and with all due courtesy and the profoundest respect, answer them. We shall find no "millions of years" necessary in the whole aggregate, including the Adamic Age, up to the present time.

It will be remembered that a vast amount of latent heat had been generating, and the terrestrial electric battery had been at work generating static electricity during the entire fourth progressive period of many thousand years. We shall remember that a vast amount of nitre had now been generated, as also any quantity of sulphur and carbon; and these, together with all the elements before mentioned, and many mineral and metallic oxides, had now deposited and shut themselves in under millions of tons pressure, as is evidenced to our eyes when successive layers of broad and long leaves of once floral life are every day taken out of our coal beds, which were deposited (in company with millions of the animal organisms before described), and were so hot and heavily pressed as to be compelled to part with the oily carbonaceous hydrogen, to find its way into every possible skulking cavity, to be hunted and bored for by excited genus homo in New York and Philadelphia, whose genera and species, however, were not destined to come into existence until the close of the sixth day, which we are happy to call our day. But pardon me for the strange course of having thus taken so long a retrospective view, thence into so long a futurity, and pardon the logic. I was speaking of the vast deposit and vastly increasing combustive elements, from the time of their liquid surgings until all the variety of chemical changes had finished the closing up of the fearfully portentous magazine, until a second fiat sounded the coming in of the fifth creative day. There were no human ears to be stunned, or human dwellings to be thrown miles into space, when rocks were split asunder and thrown into high peaks of Acrons, Andes, Alpines and Alps, and continents and islands and bluffs; while others were shattered into millions of fragments, which the suddenly rushing in of the water, in its effort to find its level, carried along, triturating and wearing off the cleavage angles, assorting and depositing the sizes in conformity to the law of gravitating results; stratum upon stratum, in alternate layers of nodules, pebbles, and sand, as we now find them, either in

loose banks or cemented into conglomerate, either white, grey, or greyish-brown, like the bed upon which Roxbury, Massachusetts, stands. I was up at Cheshire, in the north-western part of Massachusetts, to witness an inexhaustible bed of white granular quartz, uncontaminated with iron or other coloring matter. I found it now and then divided by a stratum of alumina-kaoline, which I have no doubt had been charged with such solvent agents as induced an earlier decomposition than fell to the lot of its granular neighbors, who have slept there a few thousand years in undisturbed repose, until recently it awoke to distinguished fame by taking the brilliant shine off every other cut crystal glass at the first world's fair in London.

Here a thought is suggested further, in reference to the deposit of silica in its crystalline hexagon form, whether in its native inorganic form, or in its never missing agency in combination, as I have shown in all organic formations; and these are by no means slow processes, as I shall prove. Excepting in the zoophyte formations of the coral family, they are slow; but their slowness consists in the minuteness of the size of each individual of the multitudinous coral formations. The deposit of carbohydro-silicates (the latter absorbed from the ocean), is not slow in the petrefaction of those vegetative zoophytes. The slowness of the processes of forming each succeeding stratum, affords to us a clue to some (though not very correct) data, since the close of the fifth creative period, that furnished sufficient muriatic alkali for a salt ocean, and the vegetative elements for coral.

I saw in immediate prospectu, the feasibility of dissolving a ton at a time of this pure white granular quartz, or silica, in water, making a thousand gallons of liquor of flint at a time, as colorless as spring water; then, introducing several tons of the sand along with a crystallizing agent, and casting in molds in the same manner that gypsum is cast. White flint statuary and all kinds of architectural designs can be cast, that would be white as snow, and defy the hand of time for thousands of years.

And that is not the acme. I know, by practical experiment that by casting into a molded slab of this white flint, the desired colors of mineral oxyds, the most beautiful appearances of a fossilized flower garden, is produced.

It is not necessary to enter now into the interesting history, classification or anatomical formation of the zoophyte polypi

and coral family, and the similarity of their framework to the framework of all the higher grades of organized life, not only in plants but in all animal organisms, only stopping for a moment to correct the almost universal impression taught in the books, that all the coral reefs are limestone, instead of their right name, viz: "Silicious carbonate of lime." Hence, you can raise any quantity of Indian-corn in Florida, where some of the books tell us that there is no silica. But what I am coming at is the age of the world since the Adamic period (not since the beginning of the Tertiary period). The latter may be reckoned by the time it must have occupied to form the coral islands, peninsulas, etc. The reader is referred to the calculations of the world-renowned Agassiz, as well as the never-tiring Sir Charles Lyell. The latter named, wide-famed author, in his last work entitled "The Antiquity of Man," page 14, and from "Nott and Gliddon," page 352.

"Professor Agassiz has described a low portion of the peninsula of Florida, as consisting of numerous reefs of coral, which have grown in succession, so as to give rise to a continual annexation of land, gained gradually from the sea in a southerly direction. This growth is still in full activity; and assuming the rate of advance in the land to be one foot in a century, the reefs being built up from a depth of seventy-five feet, and that each reef has in its turn added ten miles to the coast, Professor Agassiz calculates that it has taken 135,000 years to form the southern half of this peninsula. Yet the whole is of post-tertiary origin, the fossil zoophytes and shells being all of the same species as those now inhabiting the neighboring sea."

In a calcareous conglomerate, forming part of the above-mentioned series of reefs, and supposed by Agassiz (in accordance with his mode of estimating the rate of growth of those reefs), to be about 10,000 years old, some fossil human remains were found by Count Pourtales. They consisted of jaws and teeth, with some bones of the feet. I present the latter account as being connected with the foregoing as cited by Dowler and Doctor W. Usher (without offering my humble opinion here as to the question of how long a time has elapsed since the beginning of the Adamic period). I refer the reader to the able reports of the investigating efforts of those industrious authors to whom I have referred for the metamorphic changes of the rocks, and

the metamorphic changes of animal and vegetable organisms since the Adamic period.

Mine has been a task far anterior to all of those, and far more responsible to my God, and myself, and my fellow-men.

It will have been seen by computing the six accumulative processes or creative divisions, in accordance with the foregoing scientific calculations, that I have presented six of these divisions of about 200,000 years each, which count about 1,200,000 years, up to the Adamic period.

Anything like a correct calculation is beyond human power; or, how long a time has elapsed since the first Mammalian period down to the present day or year or century, is also beyond our power to know. I humbly present an opinion formed from the results of such reasonings upon post-Adamic changes, as come within the range of grounds for computation.

I will state here that the present is one of the intermediate times of rest, so to speak, and that from the time of the last universal volcanic change that closed the Carbonic age and began the Tertiary accumulation, to the next universal destruction by volcanic action, another 200,000 years will have expired. How near we are coming to this final consummation, we are, I think, learning something about, if we attend to the subject. We are hearing of earthquakes in divers places. They have been increasing in an unparalleled ratio the last two years, as I predicted in a former publication.

The thoughtful world is waking up to this subject. A discontent and dissatisfaction has been caused by the extremes, from the literal teachings of the translation of Moses—(six-sevenths of a week) to the wild extremes taught in this city, viz: "countless millions, many millions," etc., as the age of our earth, these discordant, vague, random conjectures extant—not only flying upon the chemical breeze, but these geological fallacies are being taught by the savans of the present age, guided by a theory of "Moral Chemistry," that I cannot comprehend; and it is a difficult task to eradicate a once grounded error, taught by the distinguished Professor of Geological Chemistry, and much more difficult when the learned student shall have been dubbed LL. D., and D. D., and installed Rev. Dr. —, in Fifth Avenue, where, if after having found his error ten years ago, and contended for any longer time than six-sevenths of a week, he would have been waited upon by Dr.

Scalpel and have his head shaved, and a blister put on the back of his neck, to draw down through *foramen magnum* the new heresy, which so sacrilegiously conflicts with the Mosaic account, as is said.

True, "a day with the Creator of worlds is as a thousand years;" and, I am willing to admit, that there is no limit or time with the Creator—God. But we do contend that while on the one hand it is very easy to say, and for the hand to write the words, "many millions of years;" yet, that mind that can conceive of operating changes, or of any progressive ideas in relation to physical facts, transformations of things or of progressive anything, by the operation of progressive laws, must possess wild ideas. I heard one say to three thousand auditors, composed of the savans and literati of New York, at Cooper Institute, "countless millions." The processes of petrefaction afford no data.

The change of animally organized beings as well as woody fibre, into the hardest silicious or quartzose stone is slow or sudden, according to the amount of silicic acid in solution in water, and in accordance also with the presence of the above mentioned agents, most active in these chemical phenomena. I say phenomena, because they have so been considered hitherto, for want of a correct understanding of Geological Chemistry.

I was called upon years ago, (ten years since), by a chemist in a neighboring state, to account for the petrefaction of a hen's egg, in one year; the said egg having been found in a heap of horse-dung intermixed with cow-dung and the straw litter. I answered that the quantity of silex separated from the oats and corn, as well as the hay, and held again in solution by the solvents and processes of digestion, and finding their way with the straw litter along with the egg into a warm decomposing heap, the rapidly accumulating carbonic acid percolated the shell, and let in the silicic acid among the albumen, etc., of the egg; the uric acid aiding the reciprocal action, and the egg now (and for ages to come) presents its correct, precise ovoid shape, of what? Silicate of albumen, combined with silicate of lime.

But fossils or petrefactions may not, neither do they in some of the most spontaneous developments, except in limestone regions, contain but slight traces of lime. The most extensive spontaneous developments of petrefaction are almost entire

silicious formation. The forests of Egypt, cover the whole distance between Cairo and Suez, (eighty-six miles,) with silicified trunks of trees, sometimes forty or fifty feet long, and one or two feet thick. Brest, states that "they lie in all directions; and is fully confirmed in his opinion that they were silicified on the spot, etc."

The history, time, how, why and wherefore—the origin and processes of ourselves; together with the inorganic as well as organisms of animal and vegetable life in all their multitudinous varieties; and, when we say multitudinous, we are reminded of the labor of the late Professor Bronn, of Heidelberg, who reviewed and classified more than twenty-four thousand fossil animals and plants, referring each to their geological position. See contributions to Natural History of the United States, Part 1, Essay on Classification, page 108.

We can readily account for variety of fossilized plants deposited at the early Carbonaceous period of the world's history. The rapid increase of carbonaceous organizations, both animal and vegetable, and their rapid decomposition and reproduction, increased the alternate geometrical developments of the same genera and species; and we also take into account the animals and plants of the new type, new genera and species; the result of new phenomena, produced by the universal volcanic action, (heretofore described,) fossil remains of which are now being gathered in cabinets and museums, along with varieties of others whose formations indicate a subsequent existence.

Albeit, there was, no doubt, a vast variety of species of the same genera, as well as those of a new type and new species, which gradually came into existence during the prolific carbonic period of perpetual warmth and moisture. This fact, may be in a great measure, exemplified by the now existing phenomena in the moist valleys of low latitudes. Professor Agassiz, describes the land vegetation as so dense and profuse along the tributaries of the Amazon, that they are compelled to travel by water.

While we are speaking of the animals and plants of new type, genera and species, produced by new progressive action through the agencies of new materials, the result of the first universal volcanic period, fossil remains of these as well as those of still more subsequent ages are now gathered into cabinets and museums.

The variety of genera and species during the first Carbonaceous Period, may be exemplified by existing similar phenomena in low latitudes, where warmth and moisture are uniform and perennial.\*

Prof. Agassiz reports the aquatic plants so dense along the margin of the Amazon that it is difficult getting through them in a canoe or peridgua, and the density of the land vegetation is great in variety, interlacing in "heterogeneity"—"scarcely ever two plants of the same species found side by side"—and when we consider the uniform heat and moisture, never varying more than 15°, the minimum of the waters of the Amazon being 78°, and the maximum 84°; the fecundity and rapid growth of the stalk-formed palms and other trees, the leaves of some of the former measuring from "thirty to forty feet in length and ten to fifteen in width," I am struck with the similarity evidenced in the fossil proofs which are gathered from the lowest carbonic deposits, and this similarity is evidenced also in the animal organisms. It requires but little reflection to understand this similarity. In the stagnant waters of those hot latitudes we find rapid spontaneous production and reproduction. But we find only the lowest grades of animals, and a variety of these of a genera and species similar to those of the Carbonic Age. And the low grade of the native mammalia is also worthy of our speculation as to cause. . . . "The aborigines, or the present inhabitants of Brazil, were transplants from Portugal and Spain, and come under a specific classification," and will be treated upon in my coming lecture upon Ethnology.

### ETHNOLOGY—MIND—SOUL.

To understand the causes which mark the infinitudes of grades of intellect or mind of Man, presented to our common observation all over the world at this present age, we have to look to other causes than those of individual education, or individual chance, or accidental circumstances. We have to look to transmitted qualities, along with influences of climate and consequent surroundings. I have said that Man was originally created a

\* The hairs of dead horses, under like circumstances, develop the life and motions of reptiles.

perfect compound being. His perfection consisted in the symmetrical physique of all the entire man, so indispensable to the development of a soul—such a soul as God required from such a perfect organism.

“What?” says some theological friend of our present conservative day. “Do you say that the soul is a variable attribute—that it is not a superior attribute, given to all men alike?” I say that such was the case before “God repented that He had made man.” Here is another mistake in the Hebrew translation. God never “repents.” Neither do His immutable laws change. God created man a progressive, probatory free agent. “Well,” says one, “you have told us all that before. What about the soul? Did you ever see a soul.” Yes, thousands. “Well, sir; what is its size, color, form—you say that you have seen thousands.” Yes, I have always been a close observer of men and things, and of souls in particular; and, in order to convey my meaning on this all-important question, I must answer by comparative figures of speech. The soul vouchsafed to the first perfect Adam was a spiritual attribute, to be progressively magnified to the size and splendor of the sun, embracing a harmony of every conceivable kind in all the neutral tints of colors, as seen in the rainbow prism, or exemplified in the richest plumage of birds, “whose beauties languish half concealed till mounted on the wing. Their glossy plumes expanded, shine in azure, green and gold, and their beauties brighten as they take their flight to” regions above. Adam and Eve closed their eyes against the black night and all deeds of darkness, and the present habits of turning day into night, and the worship of false gods, in the present forms of fiddle-faddle, flummery, or “enlargement of phylacteries,” in either church or theater. “Color.” Yes, we have the greater number of green souls, that never get ripe. Some blue. Did you ever see a man have the blues? Many yellow souls.

“His reptile soul on filthy lucre bent,  
Always calculating cent per cent.”

Some as *black as soot*; others as *white* and *pure* as a sheet of virgin paper, or “*Tabula rasa*.”

Then there is the red (sanguinary) soul. . . . .

“On! avengers on! . . . .

Strike! till the last armed foe expires!—  
Strike! for your councils and your fires!—  
God! and your native land!”

We have many *chameleon* souls, who change both position and color, in conformity to the popular breeze; conservative souls, and many who have no soul at all—only a gizzard.

I will now rapidly mark upon the black-board, with this large square crayon, the gradual departures from the original perfectly formed human head. Which as you see here, as I mark the outline configuration, a perpendicular line of the face, forming with the base the angle of a square. "Why by the square?" You will see this fully explained both morally and physically. I will now draw an outline configuration of the extremest departure from the square to be found of Genus Homo. You see that there is a fall in the angle below  $45^{\circ}$ , when I draw a line from the centre of *os-frontis* to the top of the *os-occipitalis*. This is in consequence of a long-continued neglect of the use of the anterior frontal hemispheres; and a cerebellum soul or animal mind, so to speak, is the result in the low latitudes at the torid zone. This has been the case to a complete dereliction of all the moral cerebral functions of the brain, until those functions have ceased to exist. This has been from the fact of general listlessness and languor, caused by the heat, the spontaneous productions of food which fostered absolute indolence of both thought and action; and finally an entire dereliction of the superior, sublime, ideal, or sentimental, or soul faculties; and so you will find in all the radii of this departure from the perpendicular as aforesaid; and these have been the causes of the projecting jaws and lips of the Cannibal of the Feejee Islands. It is the falling off aloft that has exhibited this mark of distinction. Remember it has been the work of long ages—near 150,000 years—but no "millions" about it. There have been periods of educational interferences and interpositions of the Creator, God, by His retaining power of acting upon His "chosen few" in all ages, by His holy inspiration. Out of every kindred, and tongue, and people, and nation who, though as "numerous as the sands of the sea, a remnant shall and will be saved"—I mean such as have souls.

The doctrine of universal salvation seems to not be recognized here. I wish it were possible to be so. But the truth is, it savors too much of the "Demon-kratos," or Demon-ocracy of this present day in New York—I mean New Cork—which is fast generating that kind of "infallibility" that dictated the secret murder of men, women and children of those good, exem-

plary Huguenots, who have "kept the faith" since the Christian era, though hunted by infuriated demons in human form, whose leader was the "Vicegerent" of his Infernal Majesty, claiming, as now claimed, infallibility. . . . .

The sound of "Notre Dame Bell" gave the infernal signal, at two o'clock at night, in Paris in 1571! . . . Let the remembrance of that precious specimen of the now claimed infallibility illustrate my description of the present combination properties of the blue, green, sanguinary souls before mentioned, and cited here as further evidence of the truth, as well as an illustration of this part of my subject.

I am ready, if time permitted, to prove, by historical records, that Man, morally, as well as physically, has taken two steps backward and one forward, and his promise of moral and intellectual progression will prove the maxim, that history repeats itself. This was not God's purpose with Man.

It is Man's choice, which he will serve of the two prerogatives—the true God, or the priest of Baal, the Devil, and his vicegerents.

Having thus briefly submitted the foregoing facts, together with what seem to be evidenced in cause and effect, to satisfy the careful reader of these pages, that God, the great Creator of worlds without end, works through means of immutable laws. The *times, ages* and progressive processes through which all must invariably pass to the completion of his final purposes, are subjects for us to investigate with wonder and gratitude, as we find them to have been completed for the PROBATIONARY life and action of the human family, whom he has in his wisdom endowed with probationary susceptibilities to a greater or lesser extent, of His own intelligence. Yea, even of His own *holy* intelligence. Yea, of His own, own Spirit, that we may be thus qualified to grow in grace, as we advance in the exercise of our intellectual faculties, "before those that look out of the windows be darkened."

That we may understand his laws physical and divine; seize upon every surrounding index that points "from Nature's course to Nature's God!" Keeping our watchful eyes upon that great beacon light that will progressively open through the "*septum lucidum*" to a brighter and brighter halo of intellectual holy intelligence that will light us home to our intended Paradise in the mansions of a higher abode for the redeemed believer

throughout a never-ending eternity, when all the present physical elements shall have melted with fervent heat. When that event shall take place "no man knoweth."

That an inconceivable amount of latent combustive elements were deposited in the way and manner I have described, together with the additional accumulations during the long ages of *tertiary* and continued deposit of latent heat by terrestrial electricity since the commencement of the Tertiary period, admonish me that the great coming event is comparatively near.

The theory, however, now extant, that "our earth is an incandescent mass of liquid fire or burning lava, save only of a few miles crust," is not true, as my creative theories prove. I have said that there exist fissures, and ignition in some few places, and that they are increasing.

Oxygen and sulphur and nitre, with iron and other combustive mineral and metallic combustive elements, saying nothing of the carbons, viz.: coal, asphaltum, etc. The hydro-carbons in the form of petroleum, olefiant gas, etc., and all the inconceivable quantities of *latent* combustive agents, only waiting the match of electricity, in obedience to the sure fiat of Him whose immutable laws give to each world its exact age, and when all in the great universal magazine shall be ready for the sublime consummation, a sudden signal gun, and then the *final* bursting forth of a universal volley from the thousands upon thousands of the long pent-up magazines, when God's artillery shall have responded to the commissioned angel's last warning: "Hark! ye mortals, hear the trumpet sound aloud the mighty roar! Hark! the archangel's voice proclaiming, Thou, oh time, shall be no more!

"His loud trumpet rends the tombs, the dead awake! See the purple banner flying, hear the judgment chariot roll! . . . Tears the strong pillars of the vaults of heaven, breaks up old marble, the repose of princes. See the graves open and the bones arising, flames all around them! Hark! the shrill outcries of the guilty wretches! Lively bright horror and amazing anguish stare through their eyelids, whilst the living worm lies gnawing within them!

"Hear the sound of Christ victorious! Lo, He breaks through yonder cloud—midst ten thousand times ten thousand saints and angels calling his ransomed sinners home, quick and joyful to the palace of their God!"

Here any further liberty of human description must stop. But it is not sacrilegious to anticipate a new progressive spiritual advancement into sublimer and holier spheres of existence as long as immortality endures.

It will now have been seen that we are in possession of all the elements of VITALITY OR LIFE-POWER; and that in addition to the first created elements conducive to this power, we are supplied through the great spontaneous volcanic action, a vast supply of chemical productions, without which man could not have had or can now continue to have an existence; these are chloride of sodium and sulphur. I could write a volume upon these substances. So spontaneously disseminated are these substances in the attenuated form of ethereal vapor that we inhale them along with our oxygen and nitrogen. Suffice it for the present to say that with sulphur and chloride of sodium and iodine, together with a vegetable extract, compounded with three other substances, which use as a nervine cordial anodyne, that has no opiate reaction, together with my other hygienic agents to reproduce wasted tissue; and as I have abundant proof of the results, I will name a case to which I was called, viz.: Mrs. ———.\* The case was abandoned as hopeless by her several physicians; a living death skeleton of unceasing pain night and day for the preceding 15 years. She was 53 years of age. All the skill and ability of the ablest in the profession had been exhausted. All the gelatinous fluids in the husky remains of the bones had been taken out with "*hydriodate of potassa*" and minerals.

In seven weeks I produced *periostei* and all new tissue; reproduced the healthy secretions; reproduced good gelatinous bones; and Mrs. R——— walked out into her orchard to live to a good old age as healthy as anybody.

Mistaken *diagnoses* as well as the popular treatment for *pulmonary* diseases, pronounced *phthisis pulmonalis* when no tubercular consumption exists, and pronounced *heart disease* when no danger of that vital organ exists, and Bright's disease of kidneys where no such disease exists, have been brought to my notice recently, and where these mistakes and treatment are by men known to fame in this city. I am prepared with the evidences if I am summoned to sustain these charges, otherwise I shall let them pass by in silence, as this is called

\* It was Chronic Inflammatory Rhumatism.

professional etiquette—etiquette in killing our neighbors by a pretence to save their lives forsooth! It is high time this business is stopped. It may be said that I am blowing my own trumpet. Yes, and I mean to blow it throughout the entire world.

The theory and practice of medicine changes and has changed in all time from one extreme to another, about as often as the fashion of dress. I remember when men and women were bled because they were supposed to be too robust on the one hand, or sick on the other. If a man fell from a scaffold and was dying, he was bled to death as the only means of recovery. There are, however, cases where life has often been saved by taking the vital fluid in the article of death. In 1846, I saw Doctor Beaumont administer a fearful dose of belladonna combined with other powerful narcotics. It was a violent case of hysteria. I reminded the doctor of Abernethy's caution, and causes of death by violent spasms induced by such a dose. "I understand my business," said he reprovingly. In a half an hour afterwards two other physicians were hurriedly called in during the fifth and apparently *last* spasm. They pronounced the case beyond the reach of recovery; she was dying! "Bleed her instantly," (said I,) "the spasm will be broken up in syncope; then by gentle restoratives the vital organs may renew their action." All were against me. I took charge of the case and saved another of many lives by my interference. I have a catalogue of them, if I am provoked to bring out the record.

I shall introduce a chapter of *Hygienic suggestions* into my next lecture upon the old theory that an *ounce* of *preventive* is better than a *pound* of cure. I must first give a word of precaution to that class of physicians called "Nerve Doctors."

I have described the materials and functions of the different classes of nerves, ganglia, etc. I have described the elements and power of electricity. It is a vast power. We hear its mighty echo above the mountain heads, and catch a glimpse of its all-searching eye in the lightning's flash. And while this is burning the excess of carbon, sulphur and nitre for our well-being, we must beware how we concentrate it to cure hemiplegia. Children should not play with gunpowder before they know all about its relationship with and to vitality. I called to see a celebrated nerve-doctor in relation to this department of the practice. He "had no time to talk abstract theories," patients

were waiting their turns, etc. I went there to tell him of my interference in one of his recent cases, who had been under his treatment for six weeks, and whom I found with *amaurosis*, loss of memory and every indication of a "giving way of the great nervous centres. I asked the victim of the mistaken practice if he had been taking "*bromide of potassium*" and "*digitalis*;" his answer was, that "the doses of bromide had been doubled and then trebled." I advised him to stop it immediately; take no medicine; go down to the sea shore, take exercise, bathe, fish, etc. He is in the prime of life, very active in mind and body, very plethoric, and occasionally shows symptoms of valvular regurgitant obstruction in the seat of circulation, the heart.

In all cases of this class of diseases, whether of "fatty degeneration of the heart," or, dropsical cases, etc., there are many innocent ways and means of throwing off the superfluous fatty fluids, without resorting to either *bromide of potassium* or *digitalis*, or bromide of ammonium. Before you get your intended diuretic or diaphoretic results from *digitalis*, or, by bromide of ammonium, it will (like bromide) so much have dilated the capillaries, that they refuse to resume their wonted action. There are many deaths of softening of the brain by the (now general) use of those drugs.

The best "Nerve Doctor," is the one who knows what vital power is, and that the necessary quantity of electricity is spontaneously generated, by the ways and means we shall know all about; not forgetting that the best of all "Nerve Doctors are found in my Hygienic Nomenclature, with special directions, etc., etc.

I will offer here a few

## HYGIENIC SUGGESTIONS.

Dame Nature is indignant when her blooming daughters marry fancy young gentlemen, who don't know beef. Albeit, she has taught her obedient, sensible daughters, all the important departments of physical education, that they may now be prepared for a happy supervision of household affairs. But, alas! the betrothed don't know beef—and with Bridget, and butcher, and bother, and "business down town," the fountain of health, (like the food and the flowers), and the peas and beans have all assumed a dryness, despite the artificial formula of ambitious





will not be *lumpy*, but assume a smooth gelatinous consistency. The "Wheaten Grits," so *called*, should also be fresh, and *eaten* by all invalids who need a greater supply of *phosphide* in their food.

The *Hygienic Treatment* (of all who may think best to apply to me) will be varied in accordance with individual idiosyncrasies, as well as the greater or lesser degree of malignity of the type or form of disease of each class and character. The diagnosis of which will be first defined by one of my associates.

The most scientific skill and ability, as well as experience in practice, are the qualifications of my said associates. And should the case be of a blind, complicated, dangerous, extraordinary character, the *patient* will be examined by *three* of my ablest associates, who meet in consultation every day.

They are chosen by myself out of the most experienced in the regular medical profession.

It may be proper to mention the fact here that I obtained from the English Government a special diploma for my discovery in the successful arrest of the further breaking down of the Air Vessels of the Lungs, and *reproducing tissue* in *all parts* of the *system*, (as I have described) especially a *healing vapor* for the lungs. The substance (*vaporized*) is obtained from an evergreen in a mucilaginous form, and most abundant in the first full moon in the month of June, when it is in transitu to form a balsam, or before it passes from a hydrous to a resinous state. I had it gathered and dried, and forwarded from parts beyond the seas to the house of "Milhau & Sons" in this city.

My mode of reproducing *ligaments* as well as *tissues* is fully explained elsewhere. In addition to what I have said upon this subject, I will mention here that *albuminated silicates* are also taken into the stomach when we eat "*green corn*," before the silicated epidermis of the kernel shall have carbonized into a thin flinty scale, in which condition it is too irritating to the human stomach and bowels. But an ounce of preventive is better than a pound of cure.

Dame Nature is very indignant when her rosy cheeked daughters are charmed away by the capricious antics of human gasconade, "that play such fantastic tricks before high heaven, as make angels weep." She avoids the very appearance of the thousand *billet-doux* invitations neatly put up and labelled in equally mysterious compounds of *Latin* and *Greek*, to produce at pleas-

ure a flowing head of hair of any desired *fashionable* tint. She tells her daughters to avoid the company and conversation of the devotees of modern flash and flare up, with all her artificials, cosmetics, tight-lacing, tight shoes, and late hours; and every thing else of human departure from her old homestead, simple code and laws of early to bed and early to rise, and healthy exercise of body and mind, cool brain, dry feet, good food of the right kind, plenty of pure air and sunlight, cold water and friction with a towel, avoiding a draft, and above all, hot air furnaces, especially when recklessly managed. For while oxygen is a principal element of life-power, *carbonic-oxide* is a death-power. And as we have also shown that electricity is a resulting element in generating life-power, electricity administered by the unscientific doctor may become a death-power. For I trust we begin to understand how sunlight, and carbon, and sulphur, and nitre, and oxygen, and water, and storm, and calm, and alternate tornado which rears up the water-spout in old Atlantic "to a foaming fury, and the red lightning, with a storm of hail, comes rushing amain down." And we have also learned how our globe became a great magnet, acting as a positive towards its terrestrial centre, produced the law of attraction, of gravitation, in continual action with atmospheric electricity, originating the directions of shoots and roots, and alternating geometrical windings and entwinations of genus and species; all of which, with causes of alternate developments, we, I trust, begin to understand. And also how men and women become galvanic batteries; of changing from the alternate positive to the negative, etc. "Ah! it is the so forth," that has taken the time to explain these subjects.

But now that we understand all these laws, we feel ourselves ready at all times to assist Dame Nature in carrying them out. And we find ourselves ready at all times to interfere, as usual, in saving a life where there is the possible chance left.

There will be no guess-work in any diagnosis.

My associates are selected from among the most experienced, as well as most scientific in the medical profession.

I am to be found at No. ~~130 West 24th street, from 9 o'clock,~~  
A. M. to 5 P. M. BENJ. HARDINGE,

Synthetical Chemist, and

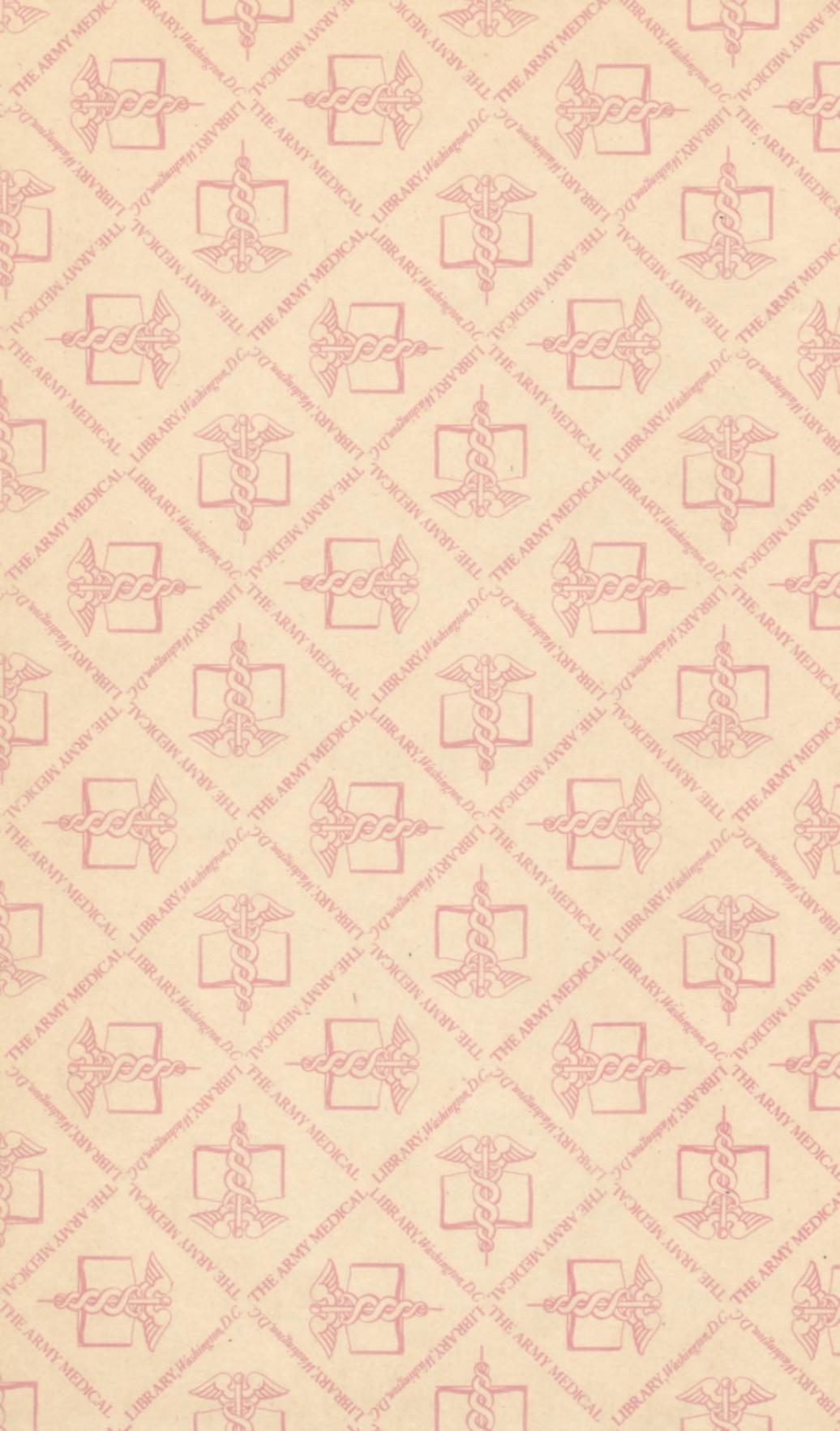
Hygienic Physician,

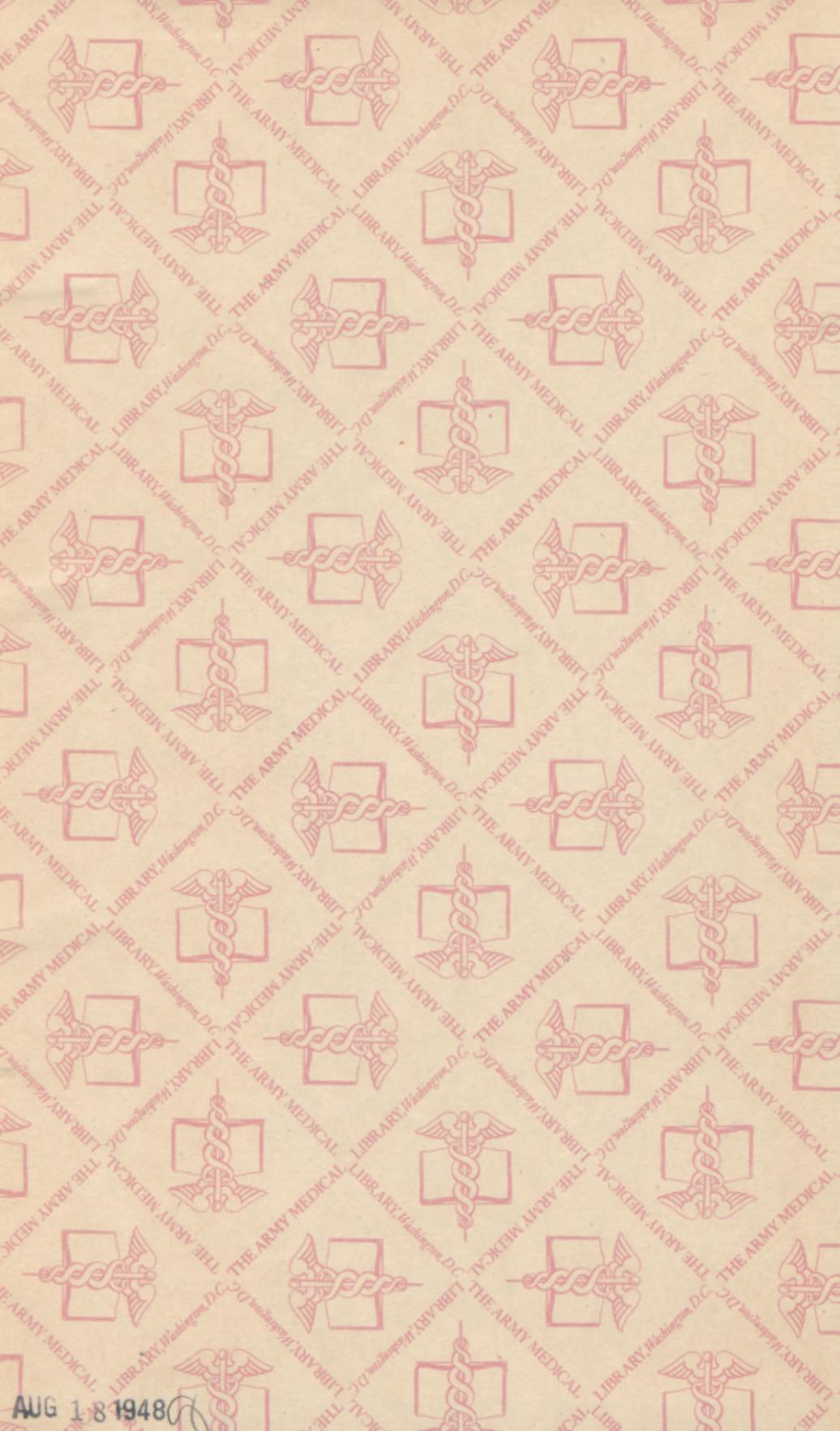
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