

BECKER (P.J.)

TEN LECTURES,
ON
MEDICAL ELECTRICITY.

EMBRACING THE SYSTEM OF

ELECTROPATHIC TREATMENT,

AS TAUGHT BY DR. PAIGE, OF BOSTON, TOGETHER WITH EXTRACTS
FROM VARIOUS WORKS, GIVING THE VIEWS OF
DR. GOLDING BIRD, OF LONDON,
DR. CHANNING, OF BOSTON,
AND OTHERS.

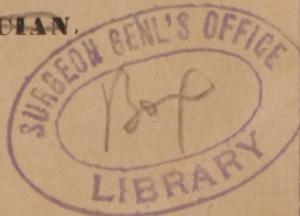
BY P. J. BECKER,

~~MEDICAL ELECTRICIAN.~~

AUBURN :

1862.

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THE LECTURES

OF

MEDICAL ELECTRICITY.

ARRANGED THE SYSTEM OF

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AS TAUGHT BY DR. VALENTIN WILSON, OF BOSTON, TOGETHER WITH EXTRACTS
FROM VALENTIN WILSON'S WORKS, GIVING THE VIEWS OF
DR. GOLDING BIRD, OF LONDON,
DR. HAZARD, OF BOSTON,
AND OTHERS.

BY P. J. BECKER.

MEDICAL ELECTRICITY.

ALBANY:

1862.

PREFACE.

These Lectures were originally designed for those who had attended a course of Demonstrative Lectures by the Author ; but as it was frequently found that many were desirous of making use of Electropathy for individual or family use, who had no opportunity of attending said classes, it was deemed advisable to make them available to all who feel interested in a proper understanding and application of Electricity as a curative agent. They are intended strictly as a practical guide, and are given in the most condensed form, and were followed, each, by experimental application of the principles taught in the Lectures. Some are quite brief, and these were followed by more extended experiments in the examination of patients before the class.

The Principles of Electropathy as taught by Dr. Paige of Boston, are considered in advance of most lecturers and writers on this subject, and therefore his general system of treatment and instruction have been adopted ; where the authority of other writers are given, it is mostly to corroborate the position taken, by eminent writers and is often, therefore, a repetition of what has been before advanced.

Much repetition of principles will be found throughout the work, which is considered a matter of necessity, in order to impress them indelibly upon the mind.

Electricity as herein taught, has been used in the cure of disease with the greatest success : not that it cures every patient that is examined, for some are beyond cure : others are not willing to take time to be cured ; but in all curable cases, where the patient is willing to observe certain regulations, and give it a fair trial, its success has been most eminent.

P. J. E.

FIRST LECTURE.

Medical Science embraces within its scope and bearing, in its application to the human system, all the laws of Physical organization in the material universe, or world of matter ; hence a Physician,—to treat skillfully all the various phases of diseases incident to the human system, should become acquainted, as far as possible, with these various laws of physical organism, and their application in medical practice.

In our present course of lectures, the limited time will only allow, and indeed, it is only our design, to attend to but one special law of physical organism,—and that one we may well consider one of the most important of the whole :—viz : Electricity.

Electricity pervades the whole universe of matter : the air, the earth, the sky, is filled with it : minerals, vegetables and animals are pervaded by it,—and cannot exist in an organized state without it : it extends even beyond the atmosphere, and through all space : it holds the planets in their orbits, and gives them their motion. When darkness was upon the face of the deep and the earth was without form and void, Electricity, as the vicegerent of the Almighty, passed over the face of the waters, and produced form, and light, and heat.

I might, did time permit, and our subject require it, show how electricity causes the rain, the dew, the tides of the ocean, the waves of the sea, and a thousand other interesting phenomena, but it is not essential to our present purpose.

Formerly, I carried with me an apparatus which was expensive and weighty, to show the scientific results of electricity in vacuo :—for instance, in the air we can pass an electrical spark some 12 or 18 inches : but if we take a cylinder 20 feet long, and place it over an air pump and exhaust the atmosphere, the spark will pass the whole 20 feet as readily as it will the few inches *in* the atmosphere.

But these experiments are of a scientific character,—and however interesting they may be, they are not necessary to the understanding of the application of electricity to disease.

In order for any person to use any agent in Medical practice, it is all important that they should understand the nature and laws of that agent : and if we are to use electricity we must learn its nature,—the source of its production and the laws by which it is governed :—this is just as important as though our agent was from the mineral or vegetable kingdom.

Electricity is a name given to an imponderable agent which pervades the material world : it is the power by which all bodies are organized : and by reversing its organizing process, disorganization takes place :—by its power all substances may be disorganized : even the diamond may be dissolved by electricity, and it cannot be done by any other power ; electricity will force water through substances the most impervious :—place the membrane of a bladder between two water-tight apartments of a glass—place water in one side and leave the other vacant, then by placing the positive pole of a battery in the water, and the negative in the other side, the water will be forced through the membrane, until the water is equal in the two sides, rather giving an increase in the original vacant apartment.

Electricity is the power which causes attraction both of cohesion and gravitation. It exists in two conditions, latent, and active or dynamic : by its power all bodies are organized, and may also be disorganized ; salt water may be decomposed, and salt deposited at the negative pole of the battery ; minerals may be extracted from rocks by the same agency.

This agent is visible only in its effects ; and although a powerful current may pass through my body, I am hardly conscious of its presence, unless it is interrupted, or broken. It is very elastic, and its leading tendency is to produce an equilibrium, and is unlike that of any other power known.

Electricity exists in two conditions, positive and negative ; which distinction arises from the direction in which it passes : that passing from the machine to my body is Positive ; that passing from me to the machine, is Negative ; it was formerly supposed to be two distinct kinds, and was known as Resinous and Vitreous. It is the same whether produced by friction, or by chemical action of the galvanic battery ;—

its effects, are, however, very different, when used as a medical agent. Frictional electricity is spasmodic ;—Chemical electricity is continuous and steady. Franklin showed that electricity drawn from the clouds was the same as that from the Electric machine, or Galvanic battery. Its simplest form is seen in the power of attraction and repulsion : two bodies positively electrified, or two negatively electrified, repel each other—but one positive and the other negative, attract each other.

Electricity when excited by friction, is called frictional electricity : when excited by chemical action, it is called galvanic electricity, and when excited by magnetism, it is called thermo electricity, or electro magnetism.

Electro magnetism, or galvanic electricity gives a continued, uninterrupted current, so long as the chemical action continues. For galvanic action, three elements are essential—viz. two metals and a fluid. We use copper, zinc, and blue vitriol dissolved ; the condition must always be such that the acid will corrode or dissolve one of the metals ; in this case it acts upon the zinc. The wire connected with the copper is positive,—that with the zinc, is negative.

Now,—in using electricity upon the human system, we in the first place, must know its effects, and the manner of its movements. First, then, Positive electricity strengthens the nervous system over which it passes, and Negative weakens it : and in order to use it properly, we must be able to distinguish the Positive from the Negative pole of the battery by the sensation produced upon our nervous systems without knowing at all from which part of the battery it proceeds : and any person who cannot thus detect the different poles, and tell also what effect each will produce upon the system, is unfit to use electricity, as he may do great injury instead of producing a benefit.

Physicians have occasionally used Electricity for nervous affections, and *happening*, by mere chance, to use it correctly they are astonished at its wonderful effects ;—the cures are truly wonderful. Again they try it, and apply the wrong pole of the battery, and instead of producing a benefit, they do real injury, and concluding that the agent used is at fault, the denounce it as a humbug.

Other Practitioners who attempt to use it, and not understanding the matter, get it wrong from the start : they do

not know how to tell the Positive pole from the Negative; neither do they understand the difference in their effects upon the human system, and they too, pronounce electricity a humbug! while the difficulty is all owing to the ignorance of the operator.

We will now test the matter by experiment with the instrument, so that each of you will be able to tell in a moment, when you take hold of the poles of the battery, which is positive and which is negative.

You will one of you step to the table, and take these two handles, which are the poles, in your hands,—grasp them firmly, and I will let on only such a charge of electricity as you can bear: now do you feel that the current of Electricity is stronger in one hand than the other? change the handles from one hand to the other; now do you feel a marked difference? Well, now recollect, the strongest is the Negative: the other, of course is the Positive. Bear this always in mind,—that the handle producing the strongest sensation is the Negative.

The reason of this is, the motion of electricity is from the battery through the positive pole to the body, and its effect is to strengthen. It leaves the body through the Negative pole, and weakens the part by carrying off electricity, and thus producing the greater sensation in the nervous system. Here is our starting point, and each must remember the facts. When we take the two poles of the Battery in our hands we produce an electrical current or circle, and we must always remember that Electricity is evolved from the machine through the positive wire, (which is attached to the copper) to the body,—it passes smoothly up the nerves of the arm, against the ramification of the nerves in the arm to the brain or spinal column, which is the center of the system, and then passes off through the other arm and negative pole, (which is connected with the zinc,) carrying away electricity from the body and thereby producing the greater sensation and weakening the limb: and this, if continued would paralyze the arm, so that it could not bear its weight.

The reason why children often escape contagious diseases and afterwards take them, is all owing to the different electrical conditions of their bodies.

When a person feels strong, active, healthy, full of life and vigor, there is hardly a possibility of their taking any dis-

ease, however contagious : but if the system is weak, feeble, debilitated, they are sure to be attacked by the contagious matter or malaria in the air, carried by electrical currents from the sick person to an enfeebled system.

By exerting our will,—arousing our energy—we put our system in a positive state electrically and we cannot under such conditions contract disease; and the proper use of Electricity in the nervous system or upon the body is the only sure and effectual way of inducing this state of feeling and action.

If the class will remember these fundamental principles of the manner of detecting the positive and negative poles of the Battery, and also their different effects, they will do as much as most classes have done in the course of two lectures : very many get them mixed up—get them wrong. I hope you each understand them and will remember them.

In Channing's work p. 55, he says: As the direction of the current is one of the important considerations, it will be remembered that, with the battery, the pole or handle connected with the copper plate is the positive pole, or the entering pole, of the current, as regards the body of the patient, and the handle connected with the zinc plate, the negative pole. With the electro-magnetic apparatus, the positive pole is that which produces the least sensation when applied to an equally sensitive part of the body with the negative. The handles may be conveniently distinguished by holding them in different hands, when the most pain and contraction will be felt in the wrist of the hand grasping the negative handle.

SECOND LECTURE.

Before commencing upon the principle subject of the lecture this evening, I will ask the class a few questions in relation to the principles stated in the previous lecture : those principles were fundamental, and are essential to a proper understanding of the subject that we thoroughly comprehend them.

Q. In how many conditions does Electricity consist ?

A. In two conditions, latent and active (or dynamic.)

Q. What distinctions are made in regard to its course of moving ?

A. Two ; Positive and Negative ; it always passing from the positive to the negative : positive and negative being relative terms,—the electricity of both is the same, only different in quantity, positive being more, negative being less, and the tendency to equalize causes it to pass from positive to negative in order to restore or establish equilibrium ?

Q. What effect has the two kinds upon the human system ?

A. The Positive strengthens, and the Negative weakens the human system.

Q. Why is this different effect ?

A. The positive adds electricity to the human system, and the negative carries off electricity from the system.

Q. How can we always know the positive and negative poles when in our hands ?

A. The negative produces the *greater* sensation, which will be more apparent by once or twice changing the handles from one hand to the other, after holding them a short time.

To Illustrate : If a person should set with their feet in water, (which is a very good way to apply electricity to the system,) and I apply the positive pole to the spine, and the negative to the water, the current of electricity is from the spine down the limbs to the water, and of course electricity

is carried from the system, and it is weakened and injured.

I have said that Electricity is the power used in the organization of bodies. If we have a solution of silver or gold in nitric acid of the battery connected with the positive pole, and place in the opposite a plate of copper or other metal attached to the negative pole, the silver or gold will be deposited on the surface of the article connected with the negative pole, forming a perfect coating, and the deposit is so delicately performed, that, should you take a daguerrean plate having your likeness upon it, and submit it to this operation, and let the coating of silver become as thick as paper for instance, then scale it off carefully, you will find the likeness uninjured, and also that there is another likeness on the silver:—by this and a variety of other experiments that I have not time to refer to, the organizing power of electricity is demonstrated, for it shows most conclusively that electricity is the power by which the daguerrean picture is taken.

Electro Magnetism, is magnetism that is induced by the agency of electricity; when the two poles of the Battery are connected it produces an electrical current from the copper to the zinc, and from the zinc to the copper. From the effects of electricity on the magnetic needle it was thought by Philosophers that magnetic attraction was caused by electricity. In the year 1819, Prof. O. Ersted of Copenhagen made the grand discovery that the electric current induced magnetism, thus proving the connection of Magnetism and Electricity. Soon after, Mr. Farada discovered that an electrical spark could be taken from a Magnet; and thus the common source of magnetism and electricity proved.

In the tropical regions the amount of electricity is very great; trees, plants and vegetables grow very rapidly, and the magnetic needle of the largest size, traverses rapidly: Electricity is the vegetating power: you may take a sickly Geranium plant and place it in the midst of a zinc and copper plate connected by a wire in the moist earth in its pot, and it will grow in a few hours as much as it would in the open air under usual atmospheric influences in weeks; remove the copper and zinc and it will wither and die in a few hours.

The farther north or south we go, the weaker the electrical current seems to be. Dr. Kane found that in latitude 65 or 70 only the smallest magnetic needles could be used.

Sir Isaac Newton discovered the law of gravity by the falling of an apple, but did not tell us what that power is that attracted the apple to the earth ; Mechanical Electricity is the power of gravity and cohesion ; this power we may illustrate by electro-magnetic induction of the helix.

A helix is a spiral line of wire in the form of a cork screw, and when surrounding a bar of steel or iron, by applying the poles of the Battery to the two extremities of the helix, the steel bar will immediately become Magnetic, (the wire of the helix is copper, and is wound with some non-conductor, as silk or cotton,) and it may then be used in large coils, and can be made to exert a cohesive power equal to hundreds or thousands of pounds, as I will show presently by the apparatus before us.

Electricity is caloric or elementary fire ; I will prove this to you by instantly heating a platina wire red hot, and flashing powder or gun cotton by the same ; merely by connecting the two poles of the Battery to the wire.

Place iron filings within the coil of the helices and they form into a circle, showing how our earth was created and by what force or power.

All friction produces Electricity. Go into any factory where belts are used for the machinery, and you will see a vast amount of electricity is evolved or excited. With your hat off, standing near one of those large belts, it will make your hair stand straight : this electrical power of the friction of belts is understood by manufacturers, and they have metallic points near by to carry off the electricity to the earth or water,—were it not for this, the factories might be blown to atoms by an electrical explosion.

Rubbing the body by the hands or cloths (dry) produces electricity, and this is the reason of its beneficial effects.

Electricity was first excited from amber, and hence its name, from the Greek, *Electron*, the Greek name of amber. It can also be excited by rubbing glass, sealing wax, paper, cotton, wool, silk, hair, feathers, &c.

The Galvanic Battery was originated by Galvania, a professor of Anatomy in Bologna, in 1790, and took its name from him. It was afterwards extended and improved by Prof. Volta, of Pavia, who constructed the Voltaic Pile, in the beginning of the present century. A voltaic pile is a succession of alternate plates of copper and zinc, with a piece of

woolen cloth between each pair of plates saturated with a solution of salamoniac, or diluted sulphuric acid.

The Voltaic or Galvanic Battery is made by a trough of some non-conducting substance, as of wedgwood-ware:—made in apartments to receive the fluid or acid, in which is immersed the plates of zinc and copper fastened to a rod or bar at the top of them so that they can all be lifted at once.

Since the beginning of the present century, a great many different Batteries have been constructed, and multitudes of improvements made, and but few of these improvements have been patented; they are mostly common property, and can be used by any manufacturer of Instruments.

Smee's Battery is one of the simplest kind; It consists of a glass vessel in which a plate of zinc and copper is immersed in sulphuric acid (weak) and united to other similar glasses by a strip of tin foil or wire.

Another is Grove's Battery, which is one of the best in use, and is generally used for telegraphic purposes: the metals are platinum and zinc: and the acids are strong nitric acid in contact with platinum, and weak sulphuric acid with the zinc: it needs great care in using on account of the injurious fumes sent forth.

Galvani discovered the effect of Electricity upon the muscular system by an accident; his wife being sick, frog soup was recommended: some frogs were procured, the hind legs were dressed and lay upon the table where the two poles of a battery happened to come in contact with them, when they began to kick as though alive:—from this slight incident great results have followed in regard to the power and effect of galvanism and electricity.

The Galvanic Battery, in its application to assist as a curative agent, is one of the most important discoveries of modern science: it has in a degree lifted the veil that concealed the mysterious workings of nature, and has opened a field for investigation and discovery, as inviting as it is boundless.

Electro Magnetic Machines like the one I use have a revolving armature by which the current is broken at each revolution, which I will now explain, and then proceed with a few experiments."

[After which he (Dr. Paige) tried the effect upon a subject, and showed how it formerly was used, by touching the pole or handle to the part affected, which is always injuri-

ous—scorching, burning—giving pain, instead of removing it.

(Some remarks of the steadiness of this machine, which is an important property,)—there should be no jerking, action of the battery—it should be steady and uniform.]

“Much of our further lectures will consist of the experiments and application of electricity to members of the class, and showing the manner of taking or ascertaining the diagnosis of disease.”

[The following is from an abridged work by L. D. Fleming, M. D., Professor of Anatomy in the New York Central College.]

HOW TO DETECT TUBERCULOUS DISEASES.



- 1 Press between the joints from 1 to 2, to detect Tubercles of the head, throat and tongue.
- 2 From 2 to 3 to find them of the arms—(rheumatic.)
- 3 From 3 to 4 to find them of the lungs and heart.
- 4 From 4 to 5 to find them of the stomach and large intestines.
- 5 From 5 to 6 to find them of the liver and spleen.
- 6 From 6 to 7 to find them of the small intestines.
- 7 From 7 to 8 to find them of the kidneys.
- 8 From 8 to 9 to find them of the uterus.
- 9 Below 9 to find them of the genital organs.

There are seven Cervical Vertebrae, twelve Dorsal, and five Lumbar, counting from the spinal column downward.

THIRD LECTURE



Before commencing my lecture this evening, I will answer any question you may desire, to understand what we have been over.

Q. Is the electricity of the body *increased* by the supply from the battery?

A. I answer it is not, but merely the electrical current re-established.

There is in healthy organism an electrical current established: when this is broken or disturbed, disease ensues; weakness of the parts; and if it be a vital part, of the whole system; the supply of electricity restores this electrical current and produces healthy action.

The nerves terminate on the outer surface of the body; if we prick the finger or bruise it, we break the electrical current; the effect is pain,—if this continues inflammation ensues, but if we supply electricity and restore the current, it soon ceases to pain us, and heals up, (the life of the blood or its vitalizing principle is electricity, when this electrical current is broken up, the blood loses its electricity and coagulates, turns black; supply electricity and it is restored.)

Q. Why is it necessary to break the current of electricity from the machine before it is received by the patient?

A. Because without this it has no sensible effect upon the nervous system, let the charge be ever so great: and even if it did we should not know the degree of electricity we are imparting, without this sensation, and might thereby do great injury by overcharging the system: but having the current broken we know its strength and effects, and can control it just as we please,—after we learn how.

Now, Animal Electricity or Magnetism is just the same as any electricity, whether found in the mineral or vegetable kingdom, only in them it is latent, as an organizing principle, while animal electricity is active or dynamic.

Electricity exists through nature; every thing and animal

is pervaded by it, some plus, some minus. The earth, the air, the clouds ; when two electrical currents meet and the one is plus and the other minus—electricity is the result.

When a tree is struck by electricity, one current may be from the sky and the other from the earth ; or both may be from the sky. Electricity passes either way, from the earth to the sky, or from the sky to the earth. Animals or men become surcharged,—have more than their usual quantity ; they are then in a positive state ; when they have less they are in a negative state. I can impart electricity from my system to another who has less, by holding their hand, or passing my hand over their head, face, &c.

Now I wish to show that electricity in the animal is the same as with man. The Gimnotus or the Electrical Eel, represented here, was one brought to Boston while I was lecturing there, and proved a martyr to science ; he was teased and hectorred to death. From a side view we see that near the head are many nerves, and by an electrical power which these give, he can produce a tremendous shock, and is his means of defence and attack. With this power he attacks his prey : the effect is precisely the same as that from the galvanic battery or electric machine. The head is positive—the tail is negative. By a sudden jerk or spasmodic action, he produces the electrical shock : and after he has given 30 or 40 shocks he becomes torpid and lays still to recuperate. The Torpedo acts in a similar manner, but is not as powerful.

What do we understand by animal electricity ? It is the same agent that gives electrical power to the gimnotus and the torpedo, and the same also that pervades our bodies, and that we produce from the electrical machine and battery.—In sickness or a diseased state the electrical current is broken and the electricity given off, and the body loses its strength and vitality ; in collapsed stages of cholera it is astonishing to witness the amount of electricity given off ; it has been drawn off in sparks by the knuckles held at one or two inches distant,—also in low stages of fevers, &c.

When the electrical currents are broken disease is the result, and it is to restore this that we supply electricity : and it is the same principle which we find as giving vegetable life as well as animal life.

We will now notice some of the avenues through which it passes, remembering all things are surrounded by it ; some

have more and some have less: a healthy man contains more electricity than fifty batteries.

Our object is for permanent cures,—and it depends upon the patient whether it shall be only partial or permanent, and not upon the Doctor.

Electricity supplies the vital forces of the body, as it is evolved through the various avenues, and according to that supply: 1st through the stomach; the latent electricity of meat, bread, &c. are set free and appropriated to vitalize the system: making blood, bone, sinew, &c.

Water when warm is one step towards evaporation, and of course gives off its electricity; also the food gives out its latent electricity which is taken up or appropriated by the animal functions, and it becomes animal electricity, the same principle or power that was exerted in the organization of the potatoe, the apple, the peach, &c., when eaten it becomes disorganized and gives off that power, or in other words sets free its latent electricity, which formerly held it in organized condition. All this when taken up by the animal, becomes animal electricity.

Now if this avenue the stomach becomes weak, it does not properly disorganize or digest its food, and therefore does not send out a sufficient quantity of electricity: you must therefore keep the stomach in order—not place improper food in it,—if you would enjoy health.

Pure air is mostly oxygen, and when breathing pure air the lungs retain the oxygen which holds electricity, it comes in contact with the blood which has been carried through the system and restores to it the bright red it has partially lost while sending off its electrifying and energising power through the body; carbonic acid gas is thrown off from the lungs in exhaling the breath and this carries the poisonous refuse of breathing out of our systems into the atmosphere, and we must be careful and have our houses and especially our sleeping rooms *well* ventilated, that the air may be again charged with oxygen before we breathe it again.

The life of the blood is electricity. To show this, take a drop and let it coagulate and turn dark—now pass electricity through it and it restores it to a liquid form and its bright red color.

Arterial blood near the lungs is several degrees warmer than at the extremities. The lungs are avenues and act as a

fine screen or seive to throw off impure matter,—they should be allowed room to act free, and not be squeezed and pinched up so that they are crippled in their movements. Give them room—expand the chest—throw back the arms—give full play to these sentinels at the gates of life.

We are all the time taking up electricity and using it thro' the organs of life :—perhaps that I am now using, came a moment ago from some other planet.

The nervous system is another avenue through which we receive electricity. The nervous system is connected with the spine or brain, (for the spine is the brain continued ;) the nerves are good conductors : the brain retains electricity, and is the great reservoir of the system—so does ganglions, which are enlarged nerves or bundles of nerves. Nerves are distributing pipes to carry electricity to all parts of the body. I compare it to the water pipes at the Fairmount water works, near Philadelphia,—ganglions also, according to Draper hold spasmodic influence, even after the electricity is removed, whereas the nerves relax their tension when electricity is removed.

The object of sleep is to gain a supply of electricity which we loose through the day, and it is important that we have it ; nothing else will supply its place,—we may eat and drink as much as we please, but it does not answer the requirements of our nature. If it takes four engines to supply water to all the pipes at Fairmont, and we stop one, there will be a lack of supplying some of the pipes with water, and so if we shut off one of the avenues of receiving electricity, the body must suffer a lack and debility in consequence ; if two avenues are shut up the result will be of course still worse : we want all the avenues of electricity open all the time. Oil and Varnish will not transmit electricity— they are non-conductors, so you must not let the skin get oiled, or varnished, or filled up with anything, if you expect it to act as a conductor. I have had some patients that were oiled, varnished and painted all together.

A Doctor once called with a lady, and said to me “Doctor this lady wishes you to treat her for deafness ; now I understand all about electricity, but she prefers to have you treat her.” The first day I wet her hair, as dry hair is a non-conductor. The next day the Doctor wanted to know if I

could'nt oil the hair just as well? This showed just how much he knew of the nature of electricity.

There must not be any oil on the hand, or electricity will not pass,—sometimes this occurs to operators, and they think the trouble is in the Battery : but the trouble is in their own brain.

All friction evolves electricity. Muscular motion is friction, and hence the great benefit,—it supplies electricity to the system, the skin is supplied on the outside with an alkali, and internally with an acid, forming with the nerves a regular battery, and when rubbed gives off electricity which is carried to the spine or brain.

We will for instance, say I am positive to this gent : he being negative to me. It then flows from me to him. The hand of a well person passed upon the head imparts electricity, and may stop headache : passes on the face may stop toothache by supplying electricity. Use your will, it has electrical power, and let the patient use his or her will power,—send out the vitalizing force and desire to be helped,—not brace against it, and determine you won't be helped : do not shrink up yourself as though in fear—you draw all the electricity of the system back into its reservoir, the brain.

The way a Clairvoyant tells disease is by establishing an electrical current with the patient ; then he feels just as the patient does, and often can tell his very thoughts : this is animal magnetism and is strictly philosophical.

A man with a broken leg, had it cut off,—it was placed down cellar,—soon afterwards the man complained that some one was cutting and hurting his leg, and upon going into the cellar they found a person dissecting it ; showing that the current between the body and leg was not broken.

FOURTH LECTURE.

I am this evening to speak of the physiological relations of electricity, and electropathic diagnosis.

Many physicians have spent much time on the subject of the relations of electricity to the physiology of the human system, without making any advancement or discoveries of value to themselves or to mankind. I take new and distinct grounds in this matter, and claim, under God, to be the originator of a new and valuable system,—for it was never promulgated nor published to the world till I published it in my book.

Nature has established laws for all its elements in the material world, as well as for all organized matter; and every thing shows a wise adaptation in its relations and surroundings, and in the laws that govern it in these relations.

We none of us doubt the existence of these laws in the vegetable or mineral kingdom; the plant has its life-cells for the life-giving fluid; its roots, fibres, leaves, limbs, &c. are all adapted to its surroundings, and governed by fixed laws.—Go to the Great Kentucky Cave, and you will find in it ponds and lakes, and in them are fish with no eyes: they have no need of them in total darkness.

On the Andes mountains are men whose lungs are twice as large as ours,—the air is so light in that high region they need twice as much air to give vigor and health.

In the dark narrow streets and lanes of cities, we find children partly blind—eyes variously affected; the light is not healthy: the people are affected by the surrounding circumstances. In a cold damp valley persons may have pulmonary complaints,—let them move to a mountainous region and they will be cured. And persons accustomed to live on a mountain or high region and enjoying good health,—let them go to a low and damp region and they will have lung complaint; we see thus by turning to nature, that all things are governed by laws of adaptation.

Man could not have lived before the atmosphere was created, for it is necessary for his existence: nor could vegetables have existed until after minerals and gases, on which they subsist, were in being; all this shows the relation of things in their adaptation to their surrounding circumstances. Let us remember this law, and it will help us understand the laws of our physical organization.

All the organs of the body are designed to carry on their various functions, in order for its growth and healthy being. Thus all the solids and fluids, from their passing the lips to the stomach,—their digestion, inducing circulation, secretion, absorption, and assimilation, which is the highest degree of affinity, is all to supply food to the body: the hardest articles are converted into teeth and bones,—others make muscles, nerves, sinews, &c. Our bones are all renewed once in seven years,—our teeth once in about twenty years, or much less now, for Dentists do not make them that last so long.

Now look beyond the solids to the fluids: the atmosphere is adapted to the lungs and the lungs to the atmosphere,—Drs. do not understand this matter. 'I' said Dr. Page, 'claim its discovery as original.'

In the gases of the air, oxygen, hydrogen, and nitrogen, there is another element on which it depends for its healthy action, which never mixes with them: that is electricity:—deprive the air of this element, and it becomes a deadly poison; it is no part of the gases yet must always surround and combine them.

What is the adaptation and office of electricity to the lungs? It is to produce a healthy circulation.

The anatomy for its reception is the brain and the nerves—it is received from the air by the lungs,—by assimilation of food to blood, chyle, &c., vivifying and giving energy to the whole nervous system.

The study of the brain and of electricity were carried forward together, in different parts of the world, and the researches were adapted to each other,—the discoveries of each was just in time for the other,—and perhaps a sympathetic chord reached from one brain to the other. Did you ever think that a new thought to you, may come from a brain in Europe, or elsewhere? Are not various inventions made in several places at the same time? Electrical sympathy knows no space; it passes 28000 miles in a second.

Dr. Bell made valuable discoveries on the brain,—showed it to be very minute Nerves. Gaul and Spurzheim continued the investigation for other purposes, and showed it to be the seat of the mind. Through the brain and nerves, the mind by its power of will, causes the body to act. Many have dissected the brain and they find it to be very minute bundles of nerves, and these connected with nerves proper, reach our entire system, everywhere through the body, outside and in,—no place where we can put the point of a pin but we touch a nerve.

One office of the nerves is to give sensation or feeling ; all other parts of the body are under the controll of the nerves, and without them, fail to perform their office. Sever the nerves of the eye and we are blind,—of the ear and we are deaf,—of the tongue and we cannot taste,—of the nose and we cannot smell,—of the limbs and they cease to move,—of the stomach and it ceases to act. The nervous system is like the wires of the telegraph, and electricity the operator ready to give the alarm at the approach of danger ; or perhaps better,—a self-acting telegraph ; it sends its messages right to head quarters, the brain.

‘Mind,’ said Dr. Page, ‘is in the brain ; not a thing, shut up there ; it is an element and exists in all space, and hence the sympathy of mind in all parts of the world.’ Is this theory correct ? In various parts of the world there are about so many inventions yearly ; about the same number of cases of insanity, &c. is this not caused by mental sympathy ?

The nervous system connects the mind and body ; separate the nerves and bodily organs, and there is no mind. Philosophers tell us that we get all our knowledge through the five senses ; but the eye does not see ; it is only like a telescope. So of the other organs of touch, taste, smell, &c. This shows us that the soul and body are connected by the nerves. Now I assert that electricity is the element that connects mind and body ; if we break up this electrical current we are dead in a moment. When a person is struck with a thunderbolt, this current is broken up and the active electricity swept out of the system instantly, and they die instantly : not a muscle moves,—if the mouth is open it remains so,—if a smile is on the countenance it remains there ; and the venous and arterial blood are black in a moment.

We can live longer without solids than fluids : longer with-

out fluids than air : longer without air than electricity. We cannot live an instant without electricity.

In taking the diagnosis, the first thing is to ascertain the electrical condition of the patient, as persons differ very much in the degree of electricity they will bear comfortably: often a young miss of 12 years old will bear more than a large man.

To learn the condition of a person I take the electrical pulse. We shall find that a weak electrical pulse shows irregular circulation. Men in health have a great variety of pulses. Bonaparte controlled his and kept it at 40 : others have a natural pulse at 50, at 60, at 70, and some as high as 90 ; how can a doctor tell any thing by such a guide ? they can only guess. We must know the condition of the stomach, heart, liver, etc. ; how ? by the nerves ; their electrical state will show it ; the pulse will not. A liver ever so torpid will not be shown by the blood. I will make a comparison to show the force of what I mean : we go in to a cotton factory and see the machinery running,—we go to the flume and see the water pouring on to the big wheel, and as it moves it puts in motion a great number of smaller wheels by means of shafts and belting,—thus keeping all the machinery in motion : the water, like the blood in the human system, keeps the wheels in motion. But we come to a spinning jenny in one part of the factory that runs very slow,—hardly moves. What is the matter ? We go and see if the water is still running as fast as usual ; yes,—that is all right. But we look near the machine, and we find a belt very loose ; that is the difficulty ; it needs tightening.

So with the human system, there are local diseases that the blood will not indicate ; but there is no difficulty however deeply seated, but an electrical diagnosis will find it. This discovery, Dr. Page claimed as original with him, and it is one of importance.

Among those examined, I find the greatest difference ; some have very weak nervous systems, and such are always in danger in a thunder storm : they shrink back with instinctive dread. Others are fearless,—full of health and vigor, and are never hurt in such a storm, while the very nervous are often killed. There is also a great difference in the same body caused by disease : thus we can tell with a certainty

where the seat of disease is ; it is no guess work ; and I can teach you all to ascertain this as I do.

'I have had,' said Dr. Page, 'more than a thousand cases to test my plan, and never failed in a single instance. In all places where I have lectured, I have invited tests to be made—committees have been appointed from the audience, and they have selected such cases as they thought most intricate, and I have always told the seat of disease, and the difficulty in every instance.'

A doctor may feel the pulse and look at the tongue, and what does it all amount to? they are not reliable. Some, as I before remarked, have a natural pulse at 40, some at 50, and so on up to 90; what can a stranger tell by the pulse? it is wholly unreliable. So of the tongue; some have a coated tongue all the time; I have not been free from a coated tongue in five years, and I am well. Others are sick with certain local ailments, and yet the tongue is all right.

The Old School M. D. comes to see a patient, and how does he proceed? He, with wonderful gravity feels the pulse and examines the tongue, and forthwith makes out a prescription: go, says he with all possible haste to the druggist, and he'll make up 12 pills for you: give 2 every hour for three hours; if they produce no effect, give three every two hours; if these do no good send for me. Well, the doctor is sent for, and he prescribes six powders to be taken in like manner, and often with like effect; the patient perhaps, all the time growing worse.

Now look at it; he guesses from the beginning; he guesses at the disease,—guesses at the remedy,—guesses at the effects, and all the time makes provision for failure: if it don't operate, send for me. There is no confidence in his remedy; but he is a *regular* doctor,—all others are quacks and humbugs! And yet people will submit to be gulled in this way and say nothing about it. A yankee that knew nothing of medicine would guess right oftener than once in twelve times.

The first thing we ascertain, is the electrical condition of the patient: see how much he or she can bear without pain on the well parts of the body:—then by passing the hand carefully over the body,—when it comes over the nerves of the part affected, they will be very tender and sensitive.

The patient must hold the Negative handle between the palms of his or her hands, and the Dr. hold the Positive in

the left hand, and pass the right over the patient, carefully.

Six of you may take hold of hands and I will see how much electricity you can bear: the two outside may take the handles:—four of your bear it without flinching,—but two of you fairly writhe in pain,—this shows you that you must always begin with the lightest degree.

☞ Be sure to have the Rod or charger nearly withdrawn from the instrument, when you commence, and enter it gradually, to increase the electricity, as the patient can bear it.

Never touch the handles or poles to the part affected, as it may produce a severe shock and do great injury.

Never press the hand or the ends of the fingers upon the affected parts, as it produces a painful, burning sensation,—Use the flat hand, smoothly and carefully,—or a moistened fine sponge, attached to the wire or pole.

FIFTH LECTURE.

My subject for this evening is the cause and treatment of disease.

The anatomy of the brain and nervous system was partly presented last evening. The Brain consists of two lobes, and we may bear in mind here that most of the organs of the body are made in pairs: we have two eyes,---if one fail we can use the other: two ears, two hands, two feet, &c. All the nerves are also in pairs. A wise provision of nature, giving us a double chance for life and its enjoyments.

These lobes of the brain, the Cerebrum and Cerebellum are surrounded by or enclosed in three membranes, the Dura mater, the Pia-mater and the Anachroid membrane; the latter surrounds the brain and passes between the lobes or hemispheres. The Medulla-oblongata is below the Cerebellum and connects with the spinal column.

The spine is divided into three parts, Cervical, Dorsal and Lumbar, which with the Sacrum and Os-coccyx, constitute the spinal column. This column consists of 24 distinct bones called vertebræ, besides the sacrum; viz: 7 cervical, 12 dorsal, and 5 lumbar.

From each vertebræ proceed nerves on each side, from the intercostal nerve, and extend to all parts of the body, thus connecting the whole system with the brain.

Now I assume that the nervous influence is electricity.

In the middle region of the cerebrum is the registering membrane upon which all thoughts are stored up, through succeeding years, until early impressions seem crowded back out of sight, (so to speak) but that these impressions are not obliterated or erased, is proved beyond a doubt by the fact that in old age these early thoughts and impressions are vivid and clear,—often when memory becomes so poor as not to remember the acts of yesterday.

All the functions of the body are carried on through the nerves, and electricity is the moving agent: of this I am

thoroughly convinced. I shall first speak of the diseases of the nerves and brain.

Now of the diseases of the Nerves and Brain :

1st, Irritability, sensitiveness, nervousness.

2nd, Paralysis, partial or complete.

Nervousness or irritability prevails very extensively, and causes a great amount of suffering ; the nervous system is unstrung—the current disturbed ; and leads the subject of it into all manner of perverse actions,—cross, peevish, fretful, ugly, malicious, and brutal ; restore a healthy nervous action, and this will be remedied : the mind is not changed : No, not even by insanity. The eye may be destroyed, but the mind is not hurt ; the ears may lose their hearing, the tongue its taste, the fingers the sense of touch, and the nerves lose the power of sensation, but the mind or soul is still unharmed:—here is one of the greatest arguments for the immortality of the soul.

When the bodily mechanism is out of order, the derangement is cause of much crime often—our acts and feelings are unnatural, and unhealthy, and the degree of electrical power of a person shows also their power of character,—their acts will be in proportion to their lack of healthy electrical condition : put the body in health and it produces a reform.

Try to solve a difficult problem, in which the brain is severely taxed, and it produces nervousness—you can't think clearly, you get confused, perplexed,—you have disturbed the nervous system—overtaxed it ; if this were persevered in for a long time, you would produce paralysis or insanity ; you must rest, or serious difficulty will follow. I have often studied so that I was unconscious of all going on around me.

A man who is in a positive state, electrically can take the thunderbolt, but one negative can bear but little electricity, and but little endurance ; in electrical disturbances the sheath of the nerve press upon the nerve and produce pain.

Next Paralysis of sensation. The circulation may be deranged partially.

1st, Paralysis partialis, partial palsy of some muscle.

2nd, Paralysis hemiplegia ; palsy of one side of the body longitudinally.

3rd, Paralysis Paraplegia ; one half across the body, as both legs.

Paralysis is often symptomatic of other diseases ; it arises from excitement, fear, fright, upon distensions, etc.

Paralysis is loss of nervous power ; if the Liver is torpid, it is partial paralysis ; if the leg drags slowly along, it is partial paralysis of the nerves of the leg ; if my eye has partially lost its sight, it is amarois, or partial paralysis of the optic nerve ; if my ear has lost its hearing, the auditory nerve is paralyzed, and so of other parts.

We often find the Nerves paralyzed, and in such cases I have found them almost insensible to electricity, and have cured them.

A lady lost her only child, and grieved upon the loss till she became morbidly insane ; in treating her I found the organ of philoprogenitiveness was very tender.

The overtaxing or abuse of any organ, produces derangement, and may produce paralysis of the parts. The student overtaxes the brain ; the epicure overtaxes his digestive organs ; the sensualist his generative organs.

An undue action of the mind and energies of the body, seemingly required by the abuses of civil life, do great injury to the health of the people. Fifty years ago our fathers were content with their weekly newspaper ; their stage coach ; their canal boat ; their lumber wagon ; with simple and substantial food and clothing ; they took things coolly and enjoyed life. But now, our daily paper, our rail roads and telegraphs are hardly fast enough to answer the speed of young America ; every thing must go with lightning speed, and even then there is a manifest impatience. The people generally are affected with nervousness, and ill-health is the consequence.

From this style of life arise the organic abuses of the system ; if you tax the stomach too much, dyspepsia ensues,—he that eats hearty, cannot think clearly—he feels sleepy ; he that thinks much has not a desire to eat much. And intense mental labor may produce dyspepsia.

Physical excitement for mere gratification. Many ladies will take snuff to tickle the olfactory nerves, but they go against the use of tobacco,—oh yes,—they are opposed to the use of tobacco,—and still they are using a powder made of old quids of tobacco and old stumps of cigars picked up in our large cities, dried and ground,—this they snuff up their delicate nostrils, and oh how good it feels ! till the nerve is paralyzed, and they cannot smell at all. So of any other

gratification and abuse, the organs suffer paralysis, and are inactive; then electricity steps in for their cure. These are partial paralysis, and are cured permanently. A young lady hurts her eyes by reading late—even in bed, overtaxing the eye and partial blindness is the consequence; this can be cured; but if total blindness occur, I cannot reach the difficulty; if some sight remains, I expect to cure.

My cures in this city will support my theory as truthful.

I explain to you one of a class of diseases, and you understand the whole in the class, for all are treated alike; tic-doloreau, sciatica, or paralysis in any other part of the body, it is all the same, and treated in like manner.

Experimental.—I will now examine this person for Am-
arosis: I take a sponge and bowl of water and wet the hair thoroughly and evenly, male or female, for dry hair will not pass electricity; and in nearly all cases we have to examine the head. The patient takes the negative pole, holding it between the palms of his two hands; I the positive. Now I pass my flat hand smoothly and carefully over the head and face; I first take the rod out of the Battery, then enter it gradually little by little, till I see what can be borne without pain, and use this strength in the examination; I pass my hand over the side of the face upon the eyebrows—dip the end of one finger carefully toward the eyeball, throwing electricity into the eye, and it gives a sensation like dashing cold water through it; it is a little sensitive; upon the top of the head I discover a sensitiveness in the nerves from the eyes; I rest my hand on the nose and examine the left eye;—oh! that is very tender and sensitive!—here is the difficulty: the left eye? “Yes, it has troubled me several years.” *Last*, lay down the poles, and make passes from the center of the head each way, to equalize the circulation.

SIXTH LECTURE.

Our subject for this evening is the Bony and Muscular system.

The Bony system is the frame work of the human structure; it is like the frame of a building, and consists of 312 distinct pieces: and gives form and symmetry to the entire structure.

If we look at the Pelvis, we see that it is connected with the spinal column, which keeps the whole frame upright; there are in the spine 24 vertebræ, each distinct and separate, to which are connected by cords, ligaments and muscles all other parts of the system.

The muscular system is to keep the frame work together; it is like the nails and boards enclosing the building, and adding beauty to its finish, and securing the comfort and well-being of the dwellers within: there are membranes containing oil for the hinges or joints; there are muscles to fill out the form with a solid foundation, with an overlay of fat in certain parts, adding beauty and symmetry; the difference between muscle and fat must be borne in mind,—the lean meat of animals is their muscle: the fat is deposited upon the muscle.

There is a different muscle for each motion of the various limbs of the body,—a muscle to raise the arm, and to lower it, and another to turn it to the right, another to the left,—and the same may be said of all other movable parts of the system; on the back, running up on each shoulder is the cape muscle, being in the form of a cape, covering the shoulder blade, and giving strength to the shoulder and arms.

Muscles consist of a great number of minute fibres, and give strength and form to the various parts they cover, forming a covering and protection to the trunk and vital organs within it.

All the muscles are under the controll of the Nervous System, and are the servants of the will, producing voluntary

action. The circulation of the blood and fluids, and the action thereupon, are called *involuntary* motion.

The diseases of the Muscular System are very numerous ; a derangement of the Nervous system may effect the muscles. We shall find by experience in Medical Practice that a large part of those disorders thought to be in the chest upon the vital organs, is only in the muscular system. Many sad mistakes are thus made in the treatment of diseases : there is a close connection between the Nervous and Muscular systems—may they not become diseased as well as the vitals?

If a person has a pain in the right side, its "Oh! Doctor is'nt it the Liver?" If through the shoulders and chest, "Oh! Doctor is'nt it Consumption? I think I've got consumption;" and so of other localities of pain, always attributing the pain to some disease of the vital parts,—and it is a very hard matter to convince people that their troubles and pains arise from muscular and nervous contractions, irritations, &c. "Oh! isn't it my heart?—my lungs?—my liver?"—"half a dozen doctors told me it was." No! it may be a weakness of the muscles—a contraction—a nervous derangement!

Many folks *will* have it that they are *vitally* diseased ; and you tell them it is not so and they are offended at you.

When a muscle is injured by a strain in lifting a heavy burden, or bruised by a fall or blow, it becomes contracted : if we attempt to use it, it hurts and we desist : injuries of this kind are easily cured by electricity.

I will mention a case in point : Leeland Thurston in Lewisville, Ky., came to me with his son, a young man, who was thought to have Consumption, "the Doctors had said so," he had pain in chest, shoulders, short breath, cough, etc., was pale and feeble,—said he did not expect help. I examined first his Lungs, and found them sound, then his Liver, Heart, etc., all sound, but in the abdominal muscles was a *very* tender spot ; here was the disease ; in six days he was perfectly cured : and seven years afterwards I saw him, and he was perfectly healthy, and gave me a certificate of his cure.

A case here in Auburn, a Mr. White who works for Mrs. Fletcher, had a muscular contraction of the arm, so that he could not move it to his head ; one application of electricity cured it so that he can use it perfectly free.

The Sternum or Breast bone connected to the Ribs in front, cover and protect the chest: the collar bone forms a brace to keep the shoulders and arms back in their proper place, and to give strength: the Ribs and Sternum are covered with muscle and ligatures to protect the vital parts: if these are bent in, by leaning over forward, the lungs are compressed and cannot act freely: all the organism is deranged; the shoulders are brought forward and the back bent over like an old building beginning to tumble in. The braces (shoulder blades) have got misplaced, and the whole frame wants righting up, or the inhabitants within will get crushed. It reminds me of a beautiful bonnet in a bandbox, after the stage driver has stowed it among trunks and baggage, and it has got all smashed up; take out the jewel of a bonnet and what a looking object! Just as many people's lungs would look, could we see them.

Doctors treat all such strictures of the chest for consumption; but all their drugs do no good. They send the patient to a warm climate, but it does no good. All that is wanted is to relieve the muscular contraction; throw the shoulders back; give room for the lungs to act; the Casket is none too large for the jewel it contains. The muscles must be relaxed, and this can best be done by electricity.

Compression of the lungs causes more consumption than damp climates, for if these contractions continue they will eventually end in consumption.

One of your citizens, Mr. B. has been greatly benefitted by a few applications, and will get well if he continues the treatment, although it is one of long standing.

Many patients think they are cured of consumption, but I think consumption or ulceration of the lungs, cannot be cured. Diseases of the spine can be readily cured if not of too long standing.

Young ladies often have spinal disease. Curvatures may be on either side or inward or outward. Delicate children often have weak spines and should be fed on food containing lime in some form.

A contraction of muscles produces curvatures of the spine. A bad position in study, or standing, or sitting at a desk also: morbid deposits, etc.; these may be easily remedied by electricity; by relaxing the muscle and straightening up the spine, and being careful to keep a good position,

Tetanus or wry neck, caused by contraction of the muscles of the neck can be easily cured by relaxing the muscle, —stiff joints, stiff legs or limbs also.

Experiments.—The instructions in the use of the Battery were much like the previous evening. Philoprogenitiveness will bear usually the largest amount of electricity of any part of the system.

In using electricity we are bathing the parts with lightning as with a liniment, and we apply it with the hand, carefully and smoothly,—weak eyes are readily cured.

For Catarrh, pass the hand over the head and forehead, and the thumb and forefinger astride the nose from its root, between the eyes downward,—it *can* be cured.

Tonsil Glands are often cut off: they become weak and need electricity to strengthen them; make passes on the side of the neck, under the ear and near the throat; it sometimes causes deafness. I cured Dr. Warren in eight days of a most difficult case.

I never guarantee a cure, even if I know I could produce a cure in 24 hours: experience has shown me the folly of it: a cure depends upon the patient.

I might tell you multitudes of cases. Some 25 years ago I went to New Orleans, and as a Dr. N—— had just made \$100,000 in this way, I thought to follow his plan. A man came to me who suffered terribly with Dyspepsia; I agreed to cure him for \$40. When I had nearly cured him, and he felt remarkably well, he attended a party and spent the night in gormandizing; the next day he came to me full of pain and distress, as might have been expected. I told him I should not treat him any longer, and of course lost my fee.

‘Another,’ said Dr. Page, for these cases are from his narration, ‘came to be cured and I entered into a written agreement, binding him to observe certain rules of living: when he got to feeling pretty well, he gave loose rein to his appetite, and undid in a day what I had spent weeks to gain. I told him he had broken his contract; that I should give up treatment, and required my fee. He refused it, but I gained it, by arbitration.

Another case was that of an old man with heart disease; he considered himself liable to drop dead at any moment. I agreed to cure him in six weeks, for \$500. In three weeks he pronounced himself well and offered to pay me; but I re-

refused to receive it until the six weeks were up. He was taken with the cholera that night and died before eight next morning. His heart was examined and found perfectly sound. But I lost my \$500.

Mr. John Granham, in a work published in England some years ago, says that the galvanic influence will be most active in a paralyzed limb when passed along the spine. It restores diminished temperature, decreased circulation, and lost muscular action. It is assisted by immersion of the affected limb in warm water, into which the positive pole should be placed.

A great number of deeply interesting cases, of treatment and cure will be found in Channing's work, to which the reader is referred; but I would wholly discountenance the use of acu-puncture needles and moxa, together with all other old methods of needlessly torturing a patient. So long as we can pass electricity directly through any part, why is there any need of puncture needles? Or why is there any need of the cuaterizing moxa as recommended by Dr. Golding Bird? It should be dispensed with.

KIDDER'S ELECTRO MAGNETIC MACHINE,

Which is advertised in the last part of the book, is an instrument giving six currents, including the to-and-fro and the direct current: it is an instrument of much power, and will be seen by the certificates, to be in high repute among medical practitioners and Professors. This machine was patented September 18th, 1860. [See advertisement at the end of the lectures.]

SEVENTH LECTURE.

The subject for, this evening is the circulation and degeneration: subjects of great importance; for to regulate the blood and stomach are generally considered of more importance than almost any other subject which the doctor has to attend to. I consider other parts of the human system of fully as much importance as these, if not more so.

The digestive organs are designed to convert solids and fluids into such a condition that they may be taken up by other organs and assimilated into bone, muscle, nerve, blood, etc. All the food that passes the lips and finds its way into the stomach is acted upon by the various organs and gastric juice, and is thus prepared to supply the natural waste of the system.

The quantity of blood in the system is from 26 to 32 lbs., averaging 28 lbs. There are 248 bones, and 207 muscles.

The circulation of the blood is carried on through the veins, arteries, heart and lungs.

The lungs are situated one on each side of the chest, and separated from each other by a membrane called the mediastinum. Each is divided into two lobes. The right lung is larger than the other, to give room for the heart on the left side.

The Lungs are composed of the ramifications of the Bronchial Tubes, which terminate in Bronchial cells, (air cells) of the ramifications of the pulmonary artery and veins, bronchial arteries and veins, lymphatics and nerves; all held together by cellular tissues.

The Pulmonary artery, conveying the dark and impure venous blood to the lungs, terminates in capillary vessels which form a minute net work, the pareties of the bronchial cells and then converge to form the pulmonary veins by which the arterial blood, purified by its passage through the capillaries is returned to the left auricle of the heart.

The Bronchial Arteries, which are branches of the thora-

cic orata, ramify upon the Bronchial tubes, and in the tissues of the lungs, and supply them with nutrition, while the venous blood is returned by the bronchial veins to the vena azygos.

The Lymphatics, commencing upon the surface and in the substance of the lungs, terminate in the bronchial glands,—we thus see how closely connected are the nervous, muscular and circulating systems.

Some Doctors frighten patients by telling them their blood is all turning to water : it is nine-tenths water at best, and it would not require much change to separate the coloring matter—supply electricity and it will be all right.

It is the generally received opinion that the heart acts like a force pump, and propels the blood through the veins and arteries. Now I object to this theory : if it has power to force 28 lbs. of blood through the system, where does it get that power ; if it has that power why does it not force blood through a paralyzed arm or leg, or side ?—*its* power is the same, if the power is in it.

I have read many standard works in regard to the circulation of the blood, but they do not explain it at all : they only confuse with learned nonsense.

Doctors have seen the effects of a Power,—but could not tell its origin or manner of action.

If the nerves connected with the heart are severed, the heart ceases to pulsate : if the power is in the heart, why should it stop ? I think it does not hold the power nor act like a force pump. I think the arteries and veins act or pulsate with the heart and they get their *power* from the nervous system.

Nervous excitement induces congestion and paralysis : fright often causes insensibility ; stops the blood—stops the pulse ; the nerves seem to control or govern the circulation. As a proof of my position : my right side, say is palsied, the circulation is lost ; if the nerves of the head or brain are overtaxed, engorgement of blood ensues,—the vessels are clogged and cannot act,—become weak—nerves are weak ; apply electricity, and strength, and the blood flows again.

A bruised limb produces an engorgement of the blood vessels ; it becomes black by standing inactive, and not coming in contact with the electricity of the air in the lungs : apply

electricity and the circulation is restored ; the blood becomes active, and its color bright again.

Enlargement of Liver is engorgement, and may be relieved in the same way.

Tumors, Ulcers, etc. are absorbed and cured by electrical action.

In Ulcers, Scrofula, etc., Doctors like to charge it upon our ancestors, making it hereditary : but this is unnecessary and wrong—the cause is nearer by—in ourselves—it is caused by improper food and over eating.

When we take substances into the stomach that cannot be assimilated—cannot be made muscle, bone, etc., it may lodge in and clog some vessel, and produce tumors, scrofula, etc. Spices cannot be assimilated, and the less we use the better.

Eating *too much* is the trouble ; we should eat nutritious food, but eat sparingly : unassimulants are like drift wood, they stop the stream or throw it through a new and wrong channel.

Rich living and little exercise produces gout, rheumatism, swellings, etc.

Dr. Twitchell of New Hampshire, had a tumor on the eye ball,—went to Boston to a convention of Doctors and Surgeons, intending to have his eye operated upon. The Doctors examined the eye, and advised him not to have an operation. He returned home : but first visited New York, where he consulted an Astrologer : so you see that the most learned and scientific, when everything else fails, will resort to “Humbugs for help” : The Astrologer put on airs, looked wise, appeared mysterious, consulted the stars, painted on his walls, looked into the philosopher’s stone, and fully carried out in spirit the advice of some college Professors, who say to their graduating class : “young men, if you would succeed in business, you must put on airs of wisdom, and always carry about you an air of mystery.” After the Astrologer had manouvered long enough, he said : Sir, you live in the country, and near your residence is a stream of water—go to that stream three times a day and wash your head and eye, carefully and thoroughly ; for your diet observe the following rules strictly : for breakfast eat crackers and milk—eat sparingly : for dinner, reverse it, eat milk and crackers—eat sparingly : for supper, eat crackers and milk, and eat but lit-

tle ; and in six months you will be well. Dr. T. paid him his fee, and left for home ; and followed the prescription—only substituting rain water for river water, and in less than six months the tumor disappeared, and he was perfectly cured.

This Astrologer was no fool ; he had hit upon certain fundamental laws of Physiology, and used them in his prescriptions. The tumor was caused by excess of nutrition—high living ; and low living or plain living cured him.

The Catholic's forty days of Lent is a most excellent and sanitary provision, and if I were a Religionist, would almost induce me to be one,—but I am not a christian, do not profess to be, but am only a naturalist ; but if every church had a season of forty days in which all its members were required to eat only milk and crackers, *sparingly*, it would be most blessed in its results,—it would produce a revival of health, and open the way for a revival of heartfelt religion.

If a person with tumors, ulcers, scrofula, etc., eats much, it must make him worse. A boy in Bangor, with a tumor, was stuffed on beef steak and rich food, by Doctors, and he constantly grew worse—they utterly failed to cure him,—thus violating all physical laws ; this must all be reversed or you cannot cure.

In Experiments—*first draw out the rod.* Put the negative wire in a sponge and place it under the oscoccyx—end of spine ; the Dr. takes the positive and examines with his hand lightly first—all up and down the spine, upon the shoulders, under the shoulder blades, sides, etc., in front over the sternum, chest, abdomen, abdominal muscles, over heart, lungs, etc., *very light* over the heart.

In curvitures, bear your weight on the spine, and bend it back while or after applying electricity ; operate all over the spine, and then crowd it to its place ; use great strength if necessary.

In making examinations where the parts are sensitive, pass lightly over the spine, and over the chest, etc. ; if the muscles do not respond to the movement of the hand, take the sponge and bear on a little ; if there is no feeling it shows paralysis.

In a general examination, put the wire of the negative in a sponge ; put a folded napkin or towel under the sponge, and put it under the oscoccyx and let the patient sit upon it ; the

operator then holds the positive handle in his left hand, and examines with the right hand, or he takes the sponge in the right hand, with positive wire inside of the sponge, and passes it over the patient. Pass over the region of the heart very lightly, and carefully.

For Glottis or Bronchitis, pass under the throat and ears, and around the neck.

INSTRUMENTS.

Among the Electro Magnetic Machines advertised in our work, and to which we would call attention, is that of Dr. S. B. SMITH'S, which is manufactured and for sale by Amos Brown, Agent, 364 1-2 Canal-st., New York. See advertisement on 3rd page of cover.

EIGHTH LECTURE.

The subject this evening is female diseases, and they have always formed a large share of my practice. A very large portion of females are diseased in various ways, and they are cured by the general methods of treatment.

There are some thirty diseases peculiar to females, which affect them after they arrive at the age of puberty. At this time, unless natural menstruation takes place, disease ensues; one of the most common of which is *chlorosis*; the patient becomes weak and languid, but does not suffer pain; often does not lose flesh, but is usually very pale.

When electricity is applied to such patients, they at first do not seem to feel the effects of it, so prostrated has the nervous system become. I have seen a young miss of twelve years old that would bear a great deal more electricity than many a large muscular man. The period of puberty varies in different individuals from the age of 8 to 12 years. Electricity restores tone and gives strength to the nervous system and thereby brings on a natural flow of the menses. After menstruation has been once established and has ceased from action, it produces *Menorrhœa*. This is often caused by the action of the mind as well as other causes: the action of the mind may produce and also check them. The voice has been known to be stopped by the influence of the mind. A young lady got mad at some reprimand of her mother and declared she would never speak again, and she exerted her will to such an extent that she finally lost her voice and could not speak.

The menstrual discharge will always be brought on unless there is some mechanical or organic obstruction, by electricity.

Across the lower part of the abdomen we shall find the muscles and ligaments which support the womb. When these ligaments become weak, there occurs displacement of the womb. From child-bearing, and from tying on heavy

skirts just above the hips, and other causes, produce weakness of the parts, and induces *prolapsus uteri*,—the womb falls down, or turns partly over, or to one side or the other; sometimes turns diagonally, pressing against the bladder at one end and against the rectum at the other.

In Leucorrhœa or Whites, there is discharged an acrid, irritating mucous, that produces sores upon the thighs and other parts upon which it lodges. This discharge renders a person weak; it affects the nervous system as much as four times the amount, in loss of blood would; all these can be reached and cured by electricity, assisted by a local wash which I will name hereafter: in this disease and others of a similar kind, the *os-tincae* or mouth of the womb is often injured, and needs medicated treatment by use of this wash from a syringe. 'I have had' said Dr. Page, 'more than eight thousand females under treatment in the last eighteen years.'

WASH,—For the wash take 2 oz. super carb. Soda, and 1 oz. sulphate Zinc, pulverize at the druggists, and put a tea-spoon full into a pint of water.

This wash is used in parts affected; it is injected into the vagina. It is good to wash ulcers with, in connection with the use of electricity.

Many physicians use a speculum for making examinations and then apply lunar caustic; but they do not cure, and always produce much pain and irritation of the parts.

In all these and similar diseases, we use electricity with the best results: such as diseases of the ovaries, when inflamed slightly, or dropsical.

In case of local inflammation, wring out a towel wet in cold water and put on the part affected, and put a dry flannel cloth over the towel. Use the same around the throat for hoarseness and croup, wetting the towel afresh every 15 or 20 minutes, according to the necessities of the case.

In dropsy of the ovaries, clots of blood pass away from the vagina; tumors, also, sometimes affect the ovaries, all of which will be cured by absorption. 'I have cured,' said Dr. Page, 'tumors that weighed eight pounds in 8 or 10 days.'

Cancer of the womb cannot be cured. Sir Astley Cooper mentions 28 cases, all of which died under treatment.

Cauliflower, a bloody fungous excrescence, cannot be cured. Polypus at the *os-tincae*, can be cured by ligature, but should always be attended to at the beginning. Some reach

to the floor when the patient is sitting, and weigh over one hundred pounds. Hydrats, or floating tumors, may be cured.

In restoring menstruation, care should be used not to produce infanticide; I set my face against this unnatural and inhuman practice, so prevalent in some places, of producing abortions. In the city of Boston, there are every year more than five thousand cases of this inhuman butchery! If there is immortality in the soul, how many little immortals, who were strangled in the embryo of existence, will appear in judgment against those who deprived them of life? It is a fearful thought! A gentleman called yesterday with his wife, for advice in a case of menstrual stoppage. I told him if he had any reason to believe that his wife was *encient*, I would have nothing to do with the case, but if it was some organical obstruction, I could soon produce an action; he assured me he thought it was the latter. I made one application of electricity over the region of the womb, and within the next twenty-four hours the menstrual discharges came on healthy and fine.

There are women all around us who are naturally healthy and robust, that have completely destroyed their health by this unnatural practice; it is the cause of most of the diseases of females. In our Papers, even christian papers, are advertisements of Female Pills, and they are sure to caution all not to take them in pregnancy, as they will surely produce miscarriage. That is just what they want,—and have them they will. They use their pin-moey, or even sell rags to raise the dollar or two.

Obstetrics,—In all cases of protracted labor, where the pains cease, by applying electricity to the muscles each side of the womb, contraction is produced and the labor proceeds healthful and well. The attendants often tell the patient to bear down, and this exhausts her; then electricity comes in to her help most gratefully, and produces a happy delivery.

After delivery, apply electricity to the parts and it contracts the ligatures and muscles of the womb and stops her after-pains, and the patient will gain more in one week than she would in four under the common treatment. Electricity may be used with the utmost safety, and also during pregnancy, it is safe and good.

Use the sponge or hand lightly over the lower part of the abdomen, each side of the hips and surrounding parts.

NINTH LECTURE.

I shall speak briefly this evening of urinary diseases, as much of our time is to be devoted to examinations. I shall only have time to refer to classes of diseases, and those of the same class or kind are treated in a similar manner.

Diseases of the kidneys are often cured; but the old treatment of active diuretics, is the worst thing that can be done—it only aggravates the disease and tortures the patient.

Diabetes, is very difficult to cure. Stone or calculus cannot be cured by electricity, except by use of complicated instruments to enter the bladder and dissolve the calculi or stone—I have suffered dreadfully, and have been cured by other means. 'Lithontriptic,' has cured some persons.

Ulceration or inflammation of the bladder can be cured by electricity; some of the most aggravated cases of this kind have been thoroughly cured by it.

Incontinence of urine, even from childhood, can be cured; when children are weak, water passes without producing any feeling at the mouth of the bladder, and therefore it passes involuntarily. The same is the case where much water is discharged,—it has little or no acrid matter, and produces no contraction or feeling at the mouth of the bladder, and will be passed when asleep, and sometimes without knowing it when awake.

Genital diseases are all of a nervous character. I cannot go into detail,—those of you who have heard my lecture to men can glean from it most on this matter you need in relation thereto. The excitement of the genital organs has its origin in the cerebellum, and where the excitement is great, and long continued, it produces in some cases lock-jaw, and various other diseases, such as weak and sore eyes, dyspepsia, etc.

Spermatorrhea, produces nocturnal emissions. Restore the action of the brain, by the application of electricity, and keep the mind off from such matters, and a cure can be ef-

fect. Sometimes paralysis of the genital organs ensue from protracted cases,—they become cold and inactive.

Gonorrhœa, and Sphillis, I do not speak of, as I will not meddle with such diseases.

Lust, or Desire, when dwelt upon and harbored in the mind,—dreamt upon, is sometimes worse in its effects than actual adultery: 'he that looketh upon a woman to lust after her, hath committed adultery with her in his own heart,' so says the Bible, and it is on account of its evil effects that it is so emphatically denounced. The evil is caused by a nervous and unhealthy condition of the patient.

Now as to treatment: begin with the cerebellum, where the excitement is found, for so long as the mind runs upon that subject, there can be no cure. The mathematician may become insane on figures, and his mind must be taken off the subject before he can get well. The mind, in a great degree controls the body, and often is the cause of disease. Operate upon the whole head, the spine, and pelvis. Thorough and continued treatment, with the full co-operation of the patient, will work a cure.

To affect the Glottis, apply the sponge on the back of the neck; a little lower, and we reach the Bronchial tubes.—Nerves at the first Dorsal Vertebrae, reach the Lungs? those at the 2nd or 3d, between the shoulders, reach the Liver; a little lower, coming over the shoulder blade and under the arm an inch below the nipple on the left side, reach the Heart. When the Lungs are ulcerated and you pass electricity through the region of them, the pain is felt deeply; act with the hand, over the shoulder and around the region of the parts, and if much affected, the patient becomes faint, sick,—feels a sinking sensation, and the operation must be immediately stopped.

The nerves a little below those of the heart reach the stomach. The Diaphragm is reached at about the middle of the spine; when it is weak and inactive, it stops the breath and produces low feelings, hypo, hysteria, etc. Just below the diaphragm we reach the intestines. Below the os-coccyx the nerves reach the genital organs. Just above the Pelvis in the female is the womb. Just under the lower ribs, you reach the liver: the diaphragm follows the lower ribs around.

For Urinary disease, apply around the region of the kidneys and bladder; press on the os-pubis to throw it in deep.

The idea of stimulating the contraction of the womb by electricity is so obvious to those who understand its nature, that it has been used in Europe for many years passed, and with the greatest success.

Dr. Golding Bird, says with regard to it for Amenorrhœa, 'In electricity we possess the only really direct emmenagogue which the experience of our profession has furnished us with. I do not think we have ever known it to fail to excite menstruation where the uterus was capable of performing this function.

A general application for a few times, to give strength to the system, is desirable: a few days before the usual time for the monthly turns, an application should be made over and around the pubis. In cases caused by chlorosis, that disease must first be removed.

Electricity is now commanding such general attention in Europe, and is passing so rapidly into use as a curative agent in this country, that it is a matter of importance that its principles of action should become more generally understood.

HALL'S CONSTANT BATTERY,

Which is designed especially for the use of Physicians, was patented in 1859. Dr. Hall is extensively engaged in the manufacture of all kinds of electrical machines and other apparatus, for medical and scientific purposes. See his advertisement on the last page of the cover.

TENTH LECTURE.

My remarks this evening will be on Symptomatic diseases, and I shall be brief, as I have already gone over nearly the whole ground of my usual course of Lectures.

One part of the human system always sympathises with the other parts: yet, two different organs are not often affected by the same disease. If one part is weak, the other parts suffer pain or lassitude, through sympathy; if one part is overtaxed, the rest of the body sympathises with it.

Many patients complain of a pain in the head, when the cause of the pain is in some other part of the system; the pain in the head is only sympathetic: the disease may be in the stomach, or some other part of the body: if a woman has profuse menses, it decreases the secretion of milk; the breasts sympathise with the other parts. In Leucorrhœa the breasts are flabby and weak.

In making a diagnosis of disease, this law of sympathy must be borne in mind, and allowances made for it. Uterine diseases often affect other parts of the system; even Asthma may sometimes be caused by it. Counter irritants act upon this law of sympathy.

Sympathy creates disease. 'Only cure my head,' says the patient, 'and I can bear all my other pains.' But we must remove the cause; if it be the stomach, we must set that all right and the headache will cease: if it be uterine weakness, we must strengthen those parts,—and so of any other part of the system; we must remove the cause.

Epileptic fits can be cured by electricity. 'I have,' said Dr. Page, 'had many cases, and never failed to cure them.—They are often caused by uterine troubles, and are therefore strictly sympathetic. The causes are so various, that an examination of the whole body is necessary to find it.—Asthma is often sympathetic: caused by weakness in the Bronchial tubes, glottis, or nerves and muscles of the throat and breast.

Three men once came for examination, and I examined two of them thoroughly and found no disease. I then examined the third in all parts of the body till I came to the head and throat, and began to think they were all sound and well, and had come to hoax me,—but on touching the muscles of the neck connected with the Bronchial tubes, he began to choke and cough: I had ‘struck a vein,’ as the saying is. I soon saw the difficulty to be Asthma, and told the patient he had it very badly; he said he had not laid down to sleep for twelve years,—he had to be bolstered up in bed. I told him I could cure him. Many that were acquainted with the case thought it an impossibility, but in less than six weeks I cured him by electricity, though his case was very bad and of long standing.

Fevers.—In fevers, mechanical electricity is not favorable; the best remedy is *Cold Water*; by wet bandages or compress, with a dry flannel laid over it; sponging or washing with a linnen cloth; and the same may be said of all cases of Inflammation, use cold water and rubbing gently with the hands.

In *Fever and Ague*, use Electricity after the fever is gone, just as the chill is coming on, and it will stop the chill; make a general and thorough application over the head and spine; keep up this till it is time for the fever, and it will not come on. Never use electricity when the fever is on.

Ulcers and Tumors are cured by absorption—except incessant tumors, which have a deposit like cheese curd, that cannot be absorbed.

Stiff Joints can be cured: apply to the surrounding parts and through the joint.

To reach the *Ovaries*, apply around the pelvis bone: to reach the womb apply each side of the os-pubis, and to all the surrounding parts.

For *Tumor*, put the negative to the spine, and positive on and around the tumor, as *strong* as patient can bear it.

For *Ulcers and Old Sores*, apply Electricity to arouse a vital action of the parts.

In *Asthma*, apply Electricity to the respiratory organs.

In *Sprained Ankle*, pass electricity through the ankle: put the negative to the spine, and hold the positive in the left hand, and bathe or rub the leg with the hand, or put the positive wire in the sponge, and bath with that.

Also for *Milk Leg*, pass all over the leg, and the same for stiff cord in the leg.

In flowing, put negative to spine, and positive over the womb to contract it.

In hemorrhage of lungs, or ulceration, do not use electricity.

In contracting or relaxing a muscle, use electricity with negative on spine, and positive wire in the wet sponge, pass over the part affected.

Involuntary erections sometimes cause epileptic fits, as well as self abuse, carried to extent in either sex; apply electricity generally to the head, and all over the body, particularly to the back of the head and over the region of the pelvis, and surrounding parts.

I have now gone over all the various classes of diseases that I consider essential, with their treatment and cure: of course those of you who intend to pursue the subject as a calling, will make yourselves familiar with Physiology and Anatomy, and whatever else may contribute to your understanding well, the Human System. But you must not expect to cure everything, nor every body; experience will teach you much you can learn no where else. But the *proper, continued* use of Electricity, will cure a large share of the ailments of mankind.

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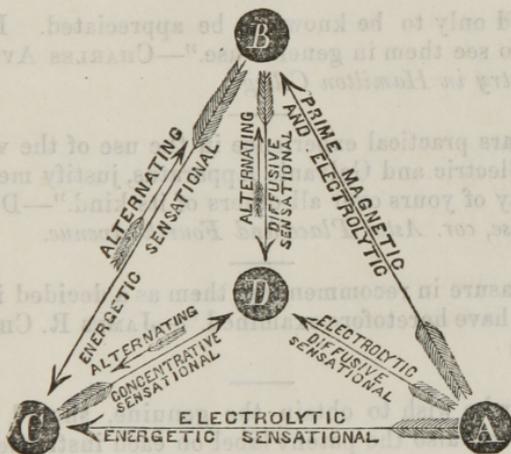
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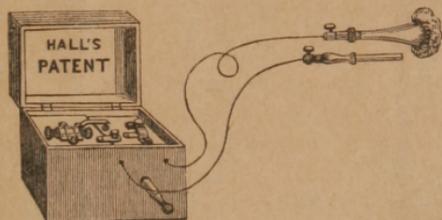
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