

Caldwell (John J.)
DUP.

REPORT OF CASES
Treated by Electricity,
BEING A REPRINT FROM THE
TRANSACTIONS

OF THE
Medical and Chirurgical Faculty
OF THE
State of Maryland,

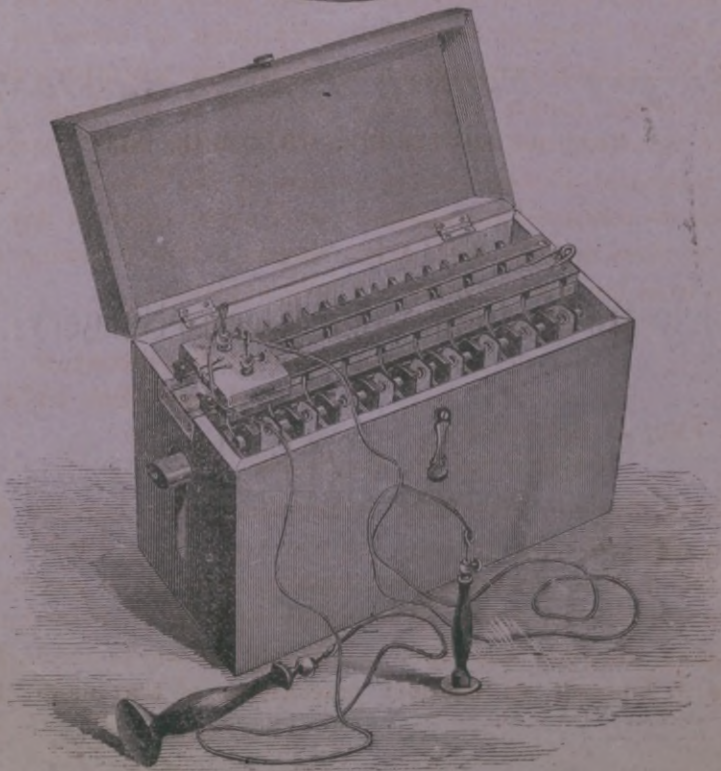
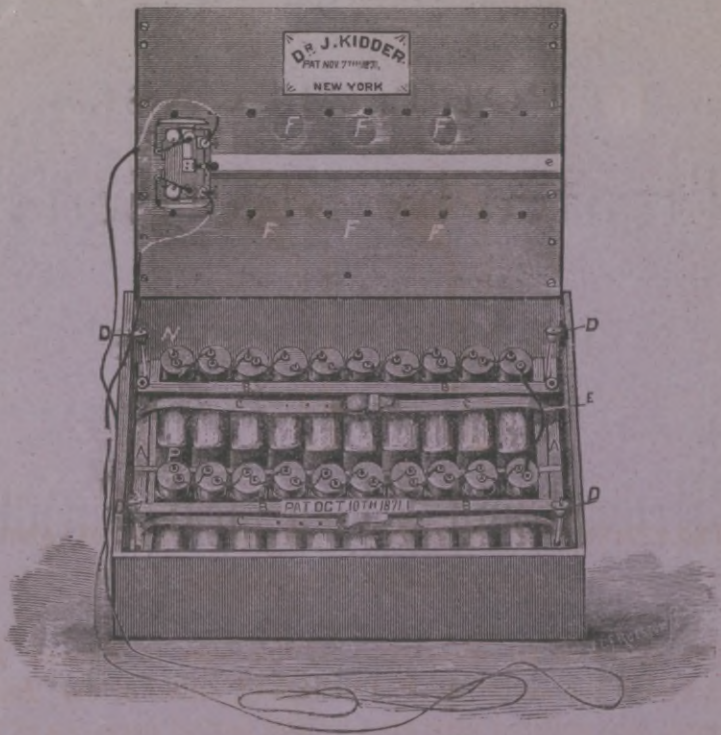
AT ITS
SEVENTY-FOURTH ANNUAL SESSION,
HELD AT BALTIMORE, MD., APRIL, 1873;

AND
ADDENDA:
Electro-Medicine and Electro-Surgery;

BY
JOHN J. CALDWELL, M. D.
BALTIMORE, MD.

Box 329.







TREATMENT OF NERVOUS DISEASES, TUMORS AND
OTHER MORBID GROWTHS.

The above is an illustration of the case of Eugene Lee Crutchfield, the son of A. P. Crutchfield, editor of the *Baltimorean*, who suffered from atrophy and partial paralysis of the muscles of the right lower extremity, after an operation for club foot, several years ago, for which he wore a Scarper's shoe, with lateral splints, supporting the limb to the knee. He came under our care on May 29th, 1873, when we commenced the treatment of these palsied muscles by the Faradic current, which we continued the applications of every alternate day for two or three months, with entire success. The following extract from his father's letter will fully explain :

OFFICE OF THE BALTIMOREAN,
August 19th, 1873.

DR. JNO. J. CALDWELL,
64 St. Paul St., Baltimore.

DEAR SIR.—I cheerfully communicate the benefits you have conferred upon my son, who was born July, 1862, with his left foot so deformed and misshapen as to be generally known as the club foot. Residing at the time in Petersburg, Virginia, the child was taken, when only six weeks old, to Dr. John J. Theawtt, an eminent practitioner of that city. He

examined the case, and pronounced it one that could be easily remedied.

In the autumn of 1869 my attention was directed to Dr. White, Professor of Surgery in the Medical College at Richmond, Virginia. After a careful investigation Professor White decided to operate, and was assisted by Professors Cunningham, Cabell and others.

The tendons were cut immediately in rear of the ankle and just above the heel, also through or under the instep from the bottom of the foot. The foot was straightened and gradually assumed a natural position, but he could only walk with the aid of a shoe made specially for him, and then heavily supported by steel splints.

The left leg was much atrophied, and seemed sadly deficient in strength. He found it impossible to walk any distance unless supported by the shoe and splint which I have described, and which extended nearly to the knee.

About three or four months ago, when the child was in his eleventh year, my attention was called to your mode of treatment, and I placed him under your care.

In a short time the muscles of the smaller limb commenced to develop and his strength to increase. About three weeks since, by your advice, the steel splint was discarded altogether, and he can now use an ordinary shoe and walk any distance, without pain or fatigue.

I attribute the recovery solely to your application of electricity.

Very truly yours,

A. F. CRUTCHFIELD,
Editor of the Baltimorean.

REPORT OF CASES TREATED BY ELECTRICITY.

By J. J. CALDWELL, M. D.

Case 1st. Mrs. L., aged 39, a resident of Brooklyn, and mother of three children, called at our office, November 15th, 1869, to consult concerning a tumor that occupied two-thirds of the breast as well as the glands of the axilla, presenting all the appearances of scirrhus. Her general history was as follows: About one year ago, she noticed a small hard tumor in the left breast, which grew larger and more painful, until she was induced by her friends to go to the Clinic of the Twenty-third street College, where she says, she was told her trouble was cancer, and her only remedy speedy extirpation with the knife. Upon examination the tumor was found hard and stony to the touch, and she complained much of lancinating pain, that proceeded from a ragged ulcer, four inches in length, situated at its base, that had long been discharging the fluid that under the microscope is considered diagnostic of malignant disease.

We determined to try the electrolytic power of Dr. Palmer's Voltaic Battery, a cheap little instrument, consisting of small alternate plates of zinc and copper. When used, these are simply sponged with dilute acetic acid and closed. The poles are upon the back with gold thread conductors. It acts primarily by disintegrating the tissues into their components, just as a drop of water is resolved by the same means into hydrogen and oxygen at the two poles, and secondarily by the gases, salts and coagula (now foreign bodies) producing pressure and chemical effects that lead to suppuration, absorption or both.

We immediately commenced treatment by a few minutes application of the electrodes, afterward ordering the ulcer to be dressed with a solution of carbolic acid and glycerine.

November 17th.—Pain almost gone, rest and appetite better; made another application of electricity, duration long enough to produce livid congestion of the skin over the tumor.

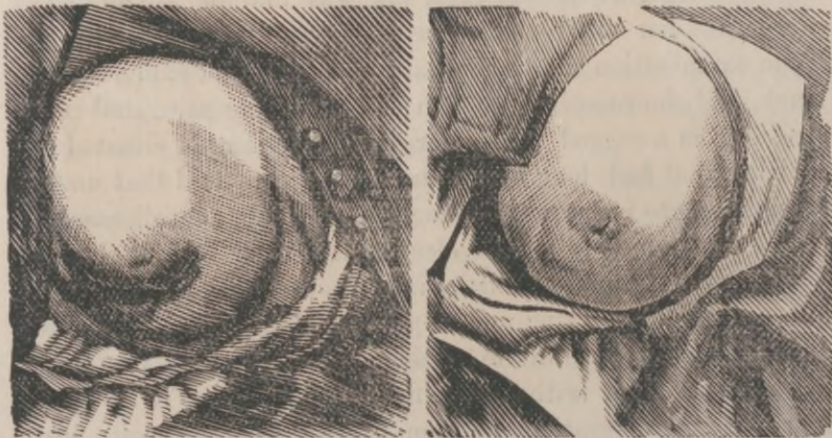
November 20th.—Much improvement in the ulcerated tract with indication of healthy granulations.

November 22d and 27th.—Tumor softer and smaller, bright granulations throughout the ulcer, no more pain; applied electricity on both days.

November 29th and December 2d.—Still improving, continued treatment.

December 9th, 12th and 30th.—Tumor decreased fully two-thirds, general appearance much better, leaden complexion of the face disappearing, treatment kept up.

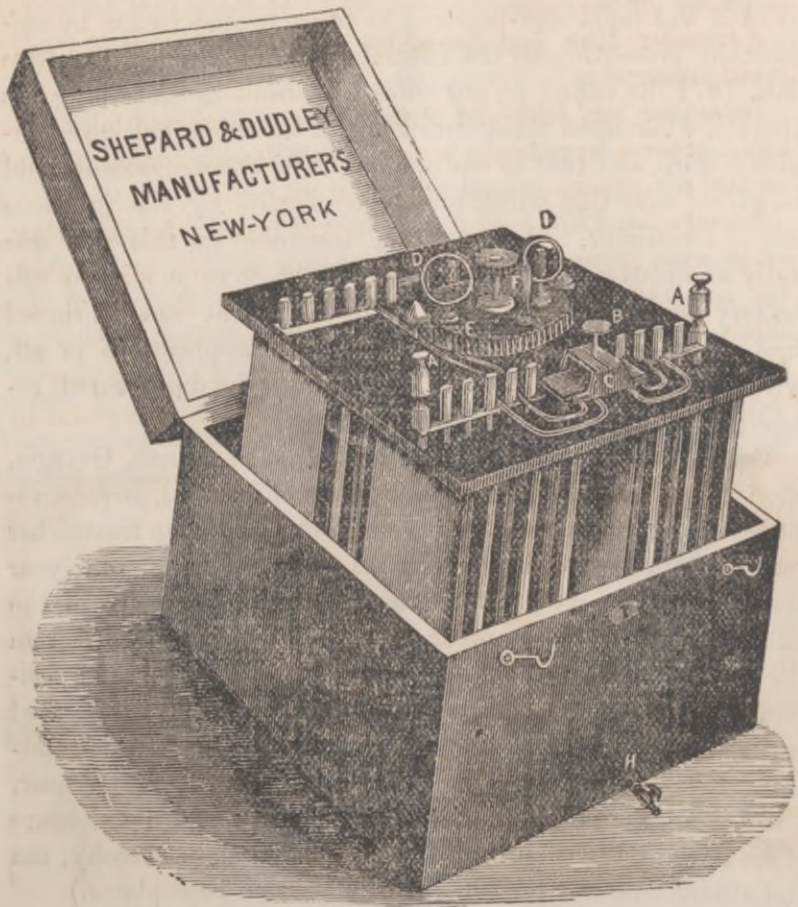
January 3d, 1870.—Called to report great progress, breast nearly well, retracted nipple commencing to bulge perceptibly. Mrs. L. continued to call at intervals of ten days until the middle of March, when she was discharged cured. Here are two photographs of the breast taken during the early part of the treatment. Any one can see the marked improvement in



size of breast and ulcer. Since that time she has been delivered of a healthy child, and is able to nurse it well.

In applying electricity to tumors we use electrodes with sponge tips, saturated with a strong solution of chloride of sodium. We always commence from the border of the tumor and gradually approach the more solid particles—as a result, suppuration sets in and destroys the growth. For a more rapid destruction we place no reliance on the subcutaneous application by needles. Since this case was treated a more convenient form of instrument for electrolysis and galvano-caustic

effects has been invented by Dr. Byrne, of Brooklyn, a picture of which is before you.



It is of the size of an ordinary Faradaic machine, or about one-half the proportions of the smallest caustic apparatus usually found at the instrument makers, yet quite as powerful and reliable as the best. It is capable of holding twelve inches of No. 21 platinum wire at a white heat as long as required under any circumstances, and being largely composed of hard rubber, is the most convenient and portable instrument at present known.

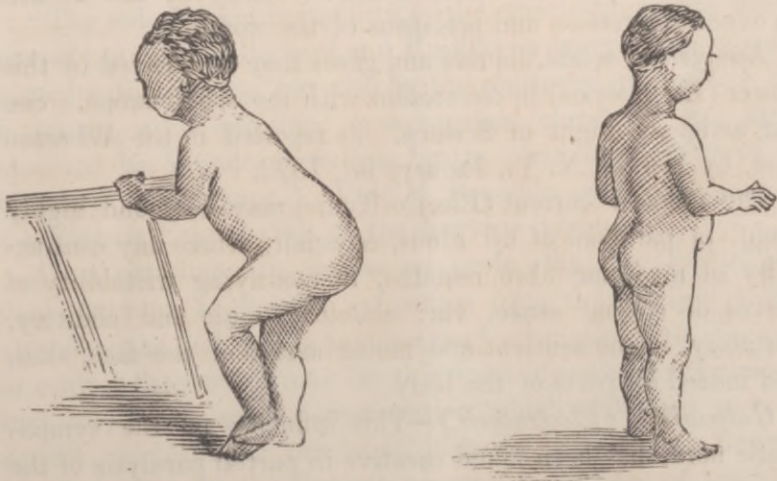
Case 2d. Since the above report, we have treated the Rev. Dr. G., a prominent Catholic clergyman, of this city, who suffered from malignant tumor, involving the right side of the face, neck, trachea and other vital organs to such an extent that surgical interference was entirely out of the question. He

had consulted prominent members of the profession, both at home and abroad, without encouragement or success. The growth was rapid and pointing to an early dissolution by suffocation, presenting all the characteristics of scirrhus. On June 5th, 1871, he called at our office to consult us concerning his trouble, whereupon we informed him of its serious and questionable nature, and that in our opinion, little encouragement could be given, save that which might be afforded by the judicious use of electricity. Our mode of treatment in this case was daily application of the galvanic current, from a sixteen cell battery (of G. F. Manf. Co.) This treatment was continued from June 5th to July 7th, twenty-four applications in all, with great success, the tumor having entirely disappeared, relieving him of all its distressing features.

Case 3d. This was a little patient from Savannah, Georgia, aged 10 years, daughter of wealthy and influential parents, residing at the Arlington House, New York; where we treated her for hip joint disease in the second stage, of about one year standing. Here we had to contend with great atrophy of the affected limb, especially of the lower part, and refrained from the use of electricity until she had kept perfect rest and position long enough to insure certain recovery of the diseased joint. As soon as we were assured of this we commenced treatment by the Franklinic or Friction Battery during August, 1869, continuing till January, 1871, when we had the pleasure of discharging her cured. No limp, shortening or atrophy; use and strength almost perfect. (For appearance see plates.)



Case 4th. Jennie McK. was brought to our office in July, 1869, by her father, who (to use his own expression) said, "we have been taking her to an eminent physician for the last three weeks, as she had ceased to walk, and was unable to put her right foot to the ground. The Dr. gave us a prescription for a mild wash to use upon a swelling in her groin, and did not seem to think it of any consequence." After stripping her we soon discovered indications of hip joint disease in the first stage. (Traumatic.) The injury was caused by a fall from a carriage. There was an abscess originating about the joint pointing in groin and vagina. We placed her under the usual treatment for hip joint disease. When the inflammatory process had subsided, we relied upon rest, good diet, friction and the Faradaic current to restore the parts to their usual vigor and strength. After twelve weeks treatment as above, she was placed upon her feet again with the happiest results. See plate.



Value of the three Currents, viz: Electro-Tonic, Electrolysis, Electro-Cautery.

Electro-Tonic, especially Faradism, has proved of service in the cure of so many heterogenous maladies, according to our own experience, as well as the testimony of many authors, so often accomplishing wonders almost incredible, it would be the work of severest labor to attempt to review all reports pub-

lished by scientific writers; although such a review would greatly enrich medical literature. The diseases in which this branch has shown itself most efficacious are those of the nervous system; while with electrolysis or galvanism, the effect for good has been demonstrated successfully upon anomalous secretions, excretions, and morbid cell developments. Although the electro-cautery, in the surgical art, has been but a short time in the field of practice, its achievements have not been less satisfactory, especially in the cure of varices, aneurisms, and more particularly in the astounding and happy results in the removal of soft and fungoid growths, where the knife and other appliances have been entirely out of the question—yes, indeed, the “*noli me tangere*,” of other days.

In Hammonds, (Meyer,) the following note is found.

“In obstetrics, finally, the electric current has been applied by the English to excite the activity of the parturient efforts, and to arrest Metrorrhagia and more recently by the French to overcome version and prolapsus of the womb.

Analysis of solids, liquids and gases may be affected by this power (Electrolysis) in connection with the spectroscope. See our article, “Light of Science,” as reported in the Wharton case, by Herald, N. Y., January 3d, 1872.

The induced current (Electro Tonic) may be found highly useful in paralysis of all kinds, especially where any contractility of muscular fibre remains, in modifying irritability of nerves of special sense, viz: olfactory, optic and auditory, gustatory, in the sentient and motor nerves of the face, skin, and indeed all parts of the body.

Galvanism, (Electrolysis.)—This influence on the sympathetic nerve has been found curative in partial paralysis of the vasa motor nerves, in troubles of the pneuma-gastric nerve, such as asthma, dyspepsia, etc., etc., in primary arterial spasms, apoplectic paralysis, in the cases of muscular progressive atrophy, in early stages of progressive locomotor ataxy, in neuralgic affection of cerebro-spinal nerves.

Authorities on the same are numerous. Both at home and abroad first class minds are engaged in this order of therapeutics.

As a Diagnostic Agent.—Hammonds, (Meyer,) page 188, says: After long experience he has become convinced of the importance of electricity in diagnosis and prognosis of paralytic diseases in general.

“A feeble contraction, under local muscular excitement, may indicate a diminished irritability of muscle and nerve fibre. If a muscle, excited by the force of the will or by electric irritation of the nerve that ramifies through it, contracts in a normal manner it cannot be essentially diseased; but if the expected reaction is wanting the abnormal effect is connected with a diseased condition of the intra-muscular nerve fibres, say, in paralysis of long standing, where the central parts develop secondary changes, and so exert an influence upon the electric condition. This will render diagnosis difficult.

“When a tumor, proceeding from the cortical substance of the brain, gradually increasing in size, compresses special nerves, we may have peripheric and central paralysis at the same time.”

“The independent irritability of the muscle fibres has been proved not only by Bernard and Koilliker’s experiments in poisoning with curarina, but also by the continued contraction of a muscle, while subjected to a constant current, a fact first observed by Wundt, as well as by the peculiar condition of a muscle in electrotonus.” Vide M. Benedikt on the Method of the Electric Examination of the Nervous System.

As a pathfinder in disease we prefer the Electric (Galvanic) current, as there is a freedom from the rattling noise attending the helix and hammer, and no matter how obscure or central the trouble may be, this quiet investigator is almost sure to produce some demonstration which will lead us to a correct conclusion, or nearly so, it being as it were a finger-board pointing to the shortest avenues to the seat of trouble. Thus we may cite injuries and other troubles of the spinal cord where the pain is referable (as a rule) to remote points or peripheric distributions.

By passing the current on the line of the cord, as we approach the point of injury, the patient complains of sharp pain or abnormal sensations under the electroides, and forgets his seat of imaginary injury temporarily. This fact holds good with all the organs of the body, viz: The Remote De-

monstration. Hence the necessity of taking up each and every division of the body in order to arrive at a safe diagnosis.

Marshall Hall was the first to direct the notice of physicians to this mode of investigation.

We will now pass on to the Electro-Cautery, having shown the manner of diagnosis by the Electrolic (Galvanic) current. We will endeavor to show by the experience of Professor Byrne, of New York, and other authorities, the advantages to be derived from the Electro-Cautery in uterine surgery. In the Medical Record for December, 1872, Professor Byrne states that the number of cases within his own observation of cautery operations, has been seventy-three. He gives a list of the cases and their results. Reference to the Medical Record, as stated, will be found not only interesting but instructive.

REPORT OF CASES UNDER OUR OWN OBSERVATION.

* Case 1.—Mrs. W. F., of Kentucky; her husband, a medical gentleman, had brought her east, in hopes of some relief, but it was too late. The growth which originated upon her left breast had grown so rapidly as to produce great constitutional disturbances, by deposits in other parts. Though in her case we were able to afford great benefit temporarily, for, cropping out from the main growth, was a bleeding fungoid, which was so large as to involve the axilla and impinge upon the free movement of the arm; this we removed while the patient was etherized, by the electric cautery loop; she rallied kindly and did not lose enough blood to stain the clothes about her.

* The second case was that of Mrs. W., of Troy, a lady fifty odd years of age, who had several grown children. Some months previous she had suffered constant burning pains, with loss of blood and ichorous discharge of offensive matter from the vagina. When first examined, we found that canal occluded in a great measure by a soft bleeding growth attached to the right lateral wall of the vagina, encroaching upon the mouth and neck of the womb, also by extension involving the rectum to that extent as to greatly impede the discharges from

* From the Physician and Surgeon's Medical Journal, of Baltimore, November, 1872.

the same. Although her doctors had given her little hope, we ventured the opinion that the tumor could be safely removed, with great relief to her. In the early part of September her doctor sent her to our office, whereupon we removed the unhealthy mass by piecemeal, we being unable (as in the case of the breast) to get around the growth with the galvanic loop, but with it we succeeded in destroying it, part after part (with this great heat) until the base was arrived at, and then we cauterized thoroughly in all directions the diseased tissue; as before, with no hemorrhage, pain, or shock worth mentioning. The patient in this case being etherized for over two hours. The after-dressing and treatment were simple. After a few days the discharges began and were of healthy pus and flakes of carbonized tissue. The first night administered an anodyne suppository. After three weeks she returned home relieved, and greatly improved generally.

These cases may or may not return, still it is the medical man's duty to afford immediate relief; then aim at a permanent cure.

The cicatrix should be carefully watched, so as to control a return by Electrolytic applications.

Of the authors abroad who have operated with the Electro-Cautery successfully, we would mention Steinhil, Amussat and Middeldorff. The latter gentleman, in 1859, gave the Galvano-Caustic loop its greatest reputation by successfully removing a morbid growth from the windpipe of a prominent clergyman, thus snatching him from the jaws of death. By the electric power we have removed successfully three cases of scirrhus during the early stages of development, which were fully reported in the medical journals and read before societies in New York and Brooklyn during the past four years, and as yet there has been no return of the disease. Benedict, Neftel and other pathologists of note agree that this disease is at first local, afterwards becomes constitutional.

We have recently exhibited the Faradic Current successfully in Baltimore, in restoring an intercepted gut in a laborer over forty years of age; and in resuscitating a child in a comatose condition of opium poisoning after twelve hours duration, which required our persistent efforts for three consecutive hours. It

was then only that the great sensorium was capable of responding to the remedial agents offered.

Julius Althaus, M. D., M. R. C. P., Physician to the London Infirmary for Epilepsy and Paralysis, says, in an article in the *Louisville Journal*, of July, 1868, that the entire number of cases treated by him up to that time, by electrolysis, amounts to sixty-three; amongst these were fifty-two non-malignant, and eleven of the malignant kind.

“The most precise and interesting researches on the relation between Voltaic electricity and the phenomena of life, are those contained in Dr. Wilson Phillips’ dissertations in the *Philosophical Transactions*; as well as in his experimental inquiries into the laws of the vital functions. In one instance he divided the 10th pair of nerves, distributed to the stomach, by incisions in the necks of several living rabbits. After this operation the parsley they ate remained in their stomachs undigested, and the animals, after evincing much difficulty in breathing, seemed to die of suffocation. In other rabbits similarly treated, when the galvanic power was transmitted along the nerve, no difficulty of breathing occurred, the Voltaic action being kept up for twenty-six hours, the rabbits were then killed, and the parsley found in a perfectly digested state, hence it appears that the galvanic energy is capable of supplying the nervous influence, so that while under it, the stomach, otherwise inactive, digests food as usual. The same experiment was tried upon dogs with like results, the battery never being so strong as to occasion painful shocks.”

Dr. Phillips, of England, evidently deserves the credit of being the first to use electricity in that country as a treatment for diseases of the human body; for the removal of dyspnoea, as stated above, led him to try Galvanism as a remedy in asthma. By transmitting the current from the nape of the neck to the pit of the stomach, he gave decided relief in every one of twenty-two cases, of which four were in private practice and eighteen in Worcester infirmary. The power employed varied from ten to twenty-five cells. The general inferences deduced by him from his many experiments, are “that Voltaic electricity is capable of affecting the formation of secreted fluids, when applied to the blood, in the same manner in which the nervous

influence is, and that it is capable of occasioning an evolution of caloric from arterial blood. Galvanism seems competent to perform all the functions of the nervous influences in the animal economy, but it obviously cannot excite the functions of animal life, unless when acting on parts endowed with the living principle."

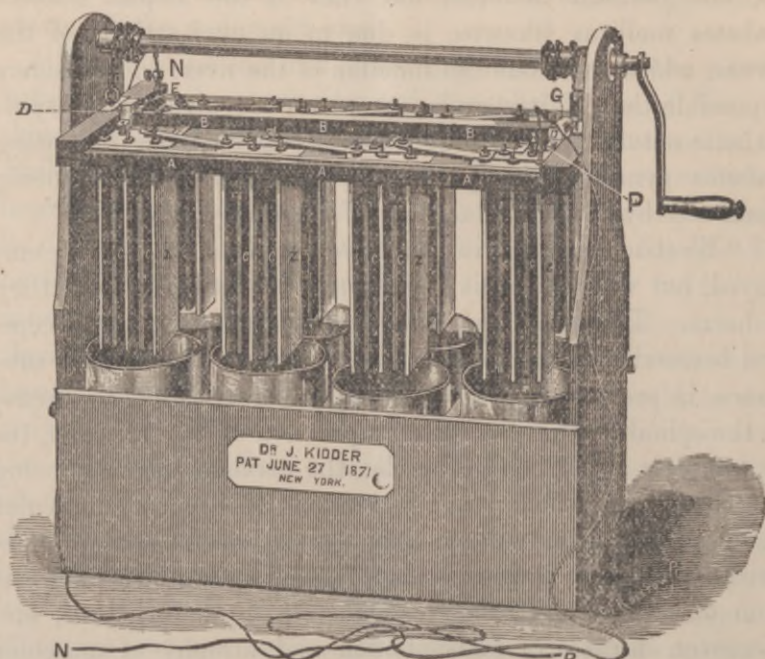
Claud Bernard believes, too, that in the human subject diabetes mellitus likewise is due to an over activity of the nerves, which stimulate the function of the liver, and considers it possible that, if it were in our power to galvanize the sympathetic nerve, this would be the best possible mode of treating diabetes symptomatically, the function of this nerve being weakened by the undue activity of its antagonists.

* "Electricity and galvanism have long been extensively employed, but when there is any structural disorganization they do harm. Thus they aggravate the mischief in cases of cerebral hemorrhage, in softening and atrophy of the cerebral substance, in pressure from tumors, and in paralysis due to disease of the spinal cord. But after reparation of the mischief, (as by complete absorption of the clot, the nervous substance being left uninjured,) when paralysis remains without any muscular rigidity, galvanism will do good. It is also useful in hysterical, rheumatic and lead palsy, as well as in reflex paralysis from disease of the urinary organs, in diphtheria, fever, etc. Moreover, in cases of mal-nutrition and atrophy of muscular tissue it acts well by augmenting chemical changes in the muscles, and increasing, therefore, the supply of blood to them. Induction currents are to be used, so as to excite the vitality of the motor nerves, the continuous current proving useless in the cases under consideration. Opinions differ widely as to the direction in which the induced current should be sent through the paralyzed limb. Naturally, the course of nervous influence is from the trunk towards the extremities, and hence it has been argued that the induced electric current should be made to travel through the nerves in the same direction, in other words, the direct current is to be used, and not the inverse. But this view is not borne out in practice; and the inverse current is generally employed, because it excites

* Tanner's Index and Practice.

stronger contractions in the muscles than the direct. First a gentle current is to be applied, the intensity being gradually increased; while as a rule the administration should not last for more than fifteen minutes at a time, even if for so long."

The removal of medullary or soft cancer growths, can be most successfully done by the Electro-Cautery operation.



* GALVANO-CAUSTIC BATTERY.

The advantages of this mode of operation over the knife are, little or no hemorrhage, freedom from shock, plenty of time in uterine cases, an avoidance of the dangers commonly attending operations in the pelvic region, viz: peritonitis, &c., &c. The mode of operating is to attach a platinum wire, large size, to the ends of the insulated wire conductors, also large size. By placing the above named platinum wire about the growth to be removed, then by immersing the elements the wires surrounding the tissues become white hot, then by slowly dragging it through the base, the tumor is removed, the parts now sponged, and the surfaces thoroughly and deeply cauterized.

* Read before the Electro-Therapeutical Society, N. York.—N. Y. Med. Jour., Dec. 1870.

The advantages over the actual cautery are a more constant heat, more time for the operation, and that different shaped instruments may be adjusted to the various requirements of the case. Aside from all this, there seems to be something electrical to oppose the bad effects of the anæsthesia. Soft growths and cauliflower excrescences cannot safely be approached by any other mode, especially when they are located in the vagina, rectum, or other passages. Instruments and electrodes of various type are required particularly for these cases.

ARTICULAR RHEUMATISM.

*Case 4.—In June, 1869, we were called to see Miss C—, of Warren street, suffering from acute rheumatism of the joints. She informed us that she endured these attacks every spring or summer for years past. We found her intolerable to the slightest touch or movement about the affected parts, so much so that we had to commence the treatment (Faradic current) at some distance from the seat of trouble, and gradually approach it. After ten or fifteen minutes of Faradism the pain and tenderness were much subdued: henceforth she could tolerate the bed-clothes, and place herself in any position.

June 7.—Made our second visit, and found her greatly relieved; had slept soundly for the first time in many nights; less swelling and redness about the joints. Examined the urine; found it laden with uric acid and urates. Ordered the saline mixture; repeated the Faradic treatment.

June 9.—She is much improved. Urine of lighter color; less acid. Continued the treatment.

June 12.—No pain; joints a little stiff. Application of electricity was continued for ten days longer, which ended the attack in a shorter period than any of the many seizures she had endured for years past. In her family it was hereditary. Ever since she has been able to ward off the attack by the application of the current.

FACIAL NEURALGIA.

*Case 5.—Miss F—, Court street, aged 35, has been a sufferer many years from facial neuralgia. Tried many remedies in vain.

* Read before the Medical Society of the County of Kings, New York, and published in the Medical Record, New York, Sep. 1869.

Oct. 5, 1869.—Made an application of the galvanic current, the positive pole to the orbit, while with the negative pole we passed a small metallic brush over the distribution of the facial nerves. The result was happy, affording instant relief. By the next morning her attack was renewed with violence. This occurred for several days, when we obtained information of a syphilitic taint; therefore we placed her upon the specific treatment, and continued battery current with much success. Since then she has had no return of her trouble.

This is a selection of many cases that have come under our observation in the application of electricity to medical and surgical cases during the past four years.

We have tried almost every electrical battery and machine of the present day, and find none so portable and so reliable at all times and under all circumstances as those made by the Galvano-Faradic Manufacturing Company of New York.

* Since the above report of cases, we have treated the Rev. Dr. G—, a prominent Catholic clergyman of this city, who suffered from malignant tumor involving the right side of the face, neck, trachea, and other vital organs, to that extent wherein surgical interference was almost out of the question. He had consulted prominent members of the profession both at home and abroad without encouragement or success. The growth was rapid, and pointing to an early dissolution by suffocation, indicating all the characteristics of scirrhus.

On June 5th, 1871, he called at my office to consult me concerning his trouble, whereupon I informed him of its serious and questionable nature, and that in my opinion little encouragement could be given save that which might be afforded by the judicious use of electricity. Our mode of treatment in this case was daily applications of the galvanic current from a 16-cell battery (of G. F. Manufacturing Co.)

This treatment was continued from June 5 to July 7, twenty-four applications in all, with great success, the tumor having entirely disappeared, relieving him of all its distressing features.

* Read before the Medical Society of the County of Kings, New York, and published in the Medical Record, N. York, September, 1864.

[From the New York Medical Journal, May, 1872.]

Removal of a Naso-Pharyngeal Polypus by the Galvano and Faradic Current.

* Case 2.—Mr. F. came under our observation February 10, 1871, for the treatment of nasal polypus of over three years' standing, the history of which ran as follows: He had consulted the first surgeons of New York and Brooklyn, and had spent a little fortune in this effort, without relief. After exploring the cavity and finding the tumor so soft, so yielding as to resist all instrumental interference, we commenced the treatment by the application of the constant current. This was repeated day after day until the last of March, with partial success, when we began the application of the Faradic current, which was continued up to April 15th, when we discharged him cured; or, as he said, in a condition which he had not experienced for over three years. Mode of application: a positive pole with a curved electroid passed into the nasal cavity of the affected side, the negative pole similarly constructed applied back of the velum palati. Duration of application, three to five minutes. In the nose, throat, and other passages, the parts must be educated to the treatment.

So long ago as 1848, my esteemed friend, Professor Harvey L. Byrd, formerly Professor of the Principles and Practice of Medicine in the Oglethorpe Medical College of Savannah, Georgia, now Professor of Diseases of Women and Children in the College of Physicians and Surgeons of Baltimore, wrote learnedly of his practical experience of Electro-Magnetism in the management of convulsive affections, and of its use in cholera, in uterine troubles, impotence of the male, and in nervous troubles of various kinds, citing many cases of so great an interest as to attract the attention of distinguished members of the medical profession in this country and Europe.†

We will take this occasion to thank the learned Professor, and Drs. Chew, Van Bibber, Christian, Professor Murray, and several other medical brothers of our city, as well as those who are scattered throughout the country, viz: Dr. Arnold, of

* Read before the Medical Society of the County of Kings, and published in the Medical Record, New York, September, 1869.

† See Oglethorpe Medical and Surgical Journal of June, 1859.

Savannah; Dr. Conden, of Louisville, Ky.; Dr. Richard Bloss, of Troy, N. York; Dr. Thompson, and others, of L. I.; and many others, who trusted their cases to my care and treatment.

Tibbits' Medical Electricity, p. 45, says: "To Duchenne, who has been aptly called the 'father of Electro-Therapeutics', may be fairly ascribed the birth of Medical Electricity, and says the application of it in diseases has been the growth of the last thirty years." But we will mention, that in the last ten years this agent has become one of the greatest additions to the healing art. Abroad we will cite such names as Althaus, Russel, Reynolds, Tanner, Anstie, Du Bois, Raymond, Duchenne, Myer and others eminent in the profession: and at home, Putnam, Hammond, M. Clymer, Beard, Rockwell, Murray, Wier, Mitchel, Chew, Van Bibber, Roberts, Bartholow, Louis Bauer, and Jos. Jones, of New Orleans, and scores of others in our land, whom we cannot now remember.

We will here mention two cases, lately under our observation, of *Progressive Locomotor Ataxy* in its first stage, as the result of sexual excesses and exposure to cold, successfully treated by the Faradic current, with hypodermic injections of strychnia along the cord—duration of treatment about three months, with an application of the current every other day, of fifteen minutes seance, each; injections two or three times a week. In the first case the young man had lately married, and to the ardor of youth we must ascribe his trouble. In the second case a young English gentleman endured great exposure to cold on a gunning frolic in old Virginia; the thermometer ranging about zero, being much below his native climate, (England.) In both cases the symptoms were much alike, viz: a loss of power of co-ordinating movements; so they had difficulty in walking, lost their balance frequently, had an uncertain and tottering gait, much like a drunken man, could not walk across the floor with their eyes closed without danger of falling head-foremost to the floor, suffered from rheumatic pains, sharp pains in limited spots, say thigh, knees and shin bones. Bottom of the feet felt as though covered with thick plasters, with occasional prickings, as with pins and

needles; when walking must watch their legs to prevent staggering or falling; legs thrown forward spasmodically.

Hammond and others report such cases also treated successfully. We will mention an interesting case sent to us by Dr. White, of Portsmouth, Virginia. A lady suffering from anæmia of the brain and cord, (or, to use the nomenclature of Beard & Rockwell, of New York,) general neuro-asthenia, to the extent of almost complete absence of muscular contractility throughout her body, under the most powerful application of the Farady current until we had exhibited strychnia (in phosphoric acid) sufficient to produce some constitutional irritation. Neuralgic pains existed throughout every point or articulation in her body. The results of treatment are manifestly slow. With all, we have great hopes. In her case we find every nerve and muscle respond to a gentle Faradic current, and when applied over the drum of the ear, her hearing is temporarily restored, though she has been deaf for several years.

II.—*Electro-therapeutics, Electrolysis, and Electro-chemical Action on Cell-tissues. With a Case of Scirrhus of the Breast.* Read by JOHN J. CALDWELL, M. D., before the Electro-Therapeutical Society of New York.*

September 25, 1871.—Mrs. J. N. B. called at my office, for treatment of a tumor of the right breast, which her physician (Dr. Thompson, of Islip, L. I.) and several other medical gentlemen of that neighborhood, had pronounced cancerous. From all its clinical bearings we fully concurred in their opinion, and commenced treatment by application of a constant current of electricity from eight to ten cells, duration from ten to fifteen minutes.

Mrs. B. informed us that her attention was drawn to her trouble in April last; first noticed a small, hard growth, about the size of a walnut, which became larger and more painful, until it reached its present size, occupying the base of the gland, and involving the nipple; surrounding tissues were hard and irregular, skin tense and purple, with two or three ulcerating points discharging the ichorous matter pathognomonic of carcinoma. In this case we could trace no hereditary taint.

* Published in New York Medical Journal. (See original article.)

September 27th.—Continued the galvanic treatment, and ordered her a wash of carbolic acid and glycerine as a disinfectant.

September 29th, October 1st, 3d, 7th, 12th, 14th, 16th, 18th, 22d, 27th, and 30th.—Continued treatment.

October 5th.—Consulted Drs. Beard and Gregory. Dr. Gregory takes a specimen for microscopic examination.

October 18th.—Two or three small nodes are all that is left of the tumor.

Last evening her case, as well as one of Dr. Beard's, was presented to King's County Medical Society, N. Y., when several of the medical gentlemen concurred with us as to its being truly scirrhus, judging alone from its clinical appearance, which Dr. Krackowitz has declared the most reliable.

October 30th.—Consulted Drs. Beard and Fleet Speir. A specimen taken by Dr. Speir, with a trocar, for examination.

(Copy of Dr. Speir's letter in reference to the specimen, November 1, 1871.)

MY DEAR DOCTOR:—In the specimen removed I can only find evidence of condensed connective tissue. There is no indication of cancer so far as this specimen goes.

Very truly yours, etc.

(Signed)

S. FLEET SPEIR.

November 1, 1871.—Mrs. B. discharged cured.

(Copy of Dr. Gregory's letter.)

DEAR DOCTOR: The specimen you sent me for examination I find to contain cancer-cells.

Yours, etc.,

(Signed.)

J. E. GREGORY, M. D.

The following is from a letter of Dr. Thompson, of Islip, L. I.:

"I omitted to say that the improvement in Mrs. B.'s case has been very satisfactory. Have advised her to continue your treatment six weeks to two months longer."

Also the annexed from Dr. W. S. Preston, Patchogue, L. I.:

"Mrs. B. has given you more of a history of her tumor than I can. I consider it truly scirrhus."

The argument that, because cancer is a constitutional taint, there is no use in treating it locally, now belongs to "the light of other days." Who for one moment would hesitate to treat chancre locally, because the patient might have syphilitic taint? Again, who knows but in cancer, as well as in syphilis, the local manifestations are primary, and the constitutional symptoms secondary? The ichorous cancer-matter may be absorbed from the tumor, thus poisoning the system; so far as we know at present, it is the "oak and the acorn, or the acorn and the oak."

In our opinion, the whole secret of treatment consists in the electrolytic power, or influence over a drop of water, the oxygen being given off at the positive pole, and the hydrogen at the negative. In applications to tumor we use electrodes with sponge-tips, saturated with a strong solution of chloride of sodium. This may have some remedial agency.

Commencing from the border of the tumor, and gradually approaching the more solid particles, suppuration sets in and destroys the growth.

After a dissolution in the manner above mentioned, there must be a deposit and coagulum. These, being foreign matters, must cause suppuration or absorption. Thus the tumor is destroyed.

To prove this, place a piece of beef in a solution of chloride of sodium at a temperature of 100° to 110° ; this fluid must be maintained at the above temperature, in a sand-bath, or in any other convenient manner, in order to make the decomposition more satisfactory and rapid; then, by bringing this tissue in contact with the positive and negative poles (platinum wire) of a constant-current battery of some eight or ten pairs, the process of electrolysis is vividly and beautifully demonstrated.

Histologically speaking, the oxygen and hydrogen of these cells being divorced, the albuminous elements, alkaline and earthy salts, fatty matter, etc., are dissolved or precipitated.

Physically, the process is highly interesting. From the positive pole will be seen flakes of coagulum, with a florid-red stain of hematine, or hydrochlorate of cruentine; while, at the negative pole, hydrogen bubbles away, with a snow-white fleecy cloud, making an ebullition, like boiling water, quite audible to the bystander.

Chemically, the chloride of sodium is robbed of its chlorine, parts of which are set free, while other portions of this gas unite with oxygen, forming Cl_o chloric acid, while at the negative pole we have still another portion uniting with hydrogen forming HCL , or hydrochloric acid. This action, together with the thermic influence, much resembles the digestive forces of the stomach. The electricity represents the vital forces, the chloric and hydrochloric acids the digestive fluids, the artificial the animal heat.

We here present the beef fluidized, after thirty-six hours of electro-chemical action, as above described; you will see it presents the appearance of a fresh sample of the fluid extract; no doubt, this will some day be one of the modes of manufacturing this, and perhaps other extracts, as well as of cooking our food in summer time, saving much heat and annoyance. The instrument used on this occasion was a portable galvanic battery, manufactured by the Galvano-Faradic Manufacturing Company of New York. It is a very reliable instrument; the thirty-cell battery is most powerful, and far more continuous than Smee's sixty-cell. It is in many respects superior to Stohrer's.

The hydrostat is also a valuable addition. This ingenious contrivance prevents an overflow of the battery-fluid, when the instrument is carried from place to place.

Mrs. McG., of Glen Cove, L. I., aged fifty-three, called at the office, and stated that, when a child, she noticed a little hard, flat point, about the size of a nickel cent, which remained the same until about three years since, when it began rapidly to increase in size, without pain. Drs. Wright and Aughtmuller informed her that it was a cancer-tumor, and advised her to go to the city for its excision or removal.

Now it presents a most formidable appearance, the whole gland being involved, with a scirrhus attachment to the rib, and the same deposit along the intercostal spaces, also infiltrating the axillary glands, the respiratory movement of both sides being free. Upon the base of the gland there is a denuded surface, circular in form, of two and a half inches in diameter, from which (during the last sixteen months) she has suffered, at intervals of several days, quite free hæmorrhage.

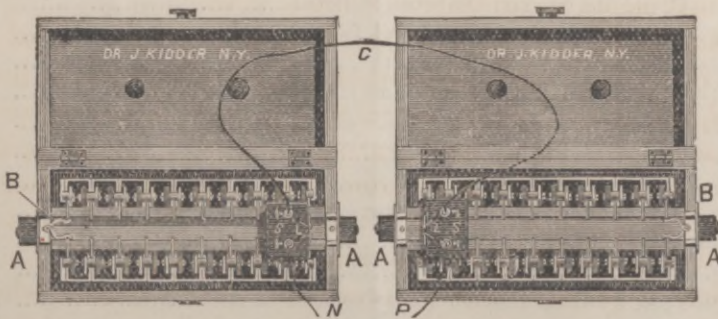
She has never suffered the slightest pain; the appearance of the latter part of the tumor looks to be much like fungus hæmatodes. Her general health is good, no hereditary taint; though she informs me that her sister has the same characteristic painless tumor in the womb, and that the doctors have failed to relieve her. To-day commenced electrolytic treatment with the Galvano-Faradic Manufacturing Company's battery. Application of eight cells, sponge-tip electrodes, saturated with chloride of sodium.

After three applications, she discontinued treatment.

The two cases here presented represent the extremes of this malady: the first the milder one, when the trouble is local; and the second, the last stage, wherein the constitutional taint is manifested plainly throughout, and where but little hope can be held out, save by applying the constant current to modify the severe pain, and by anodynes to smooth the path to the grave.

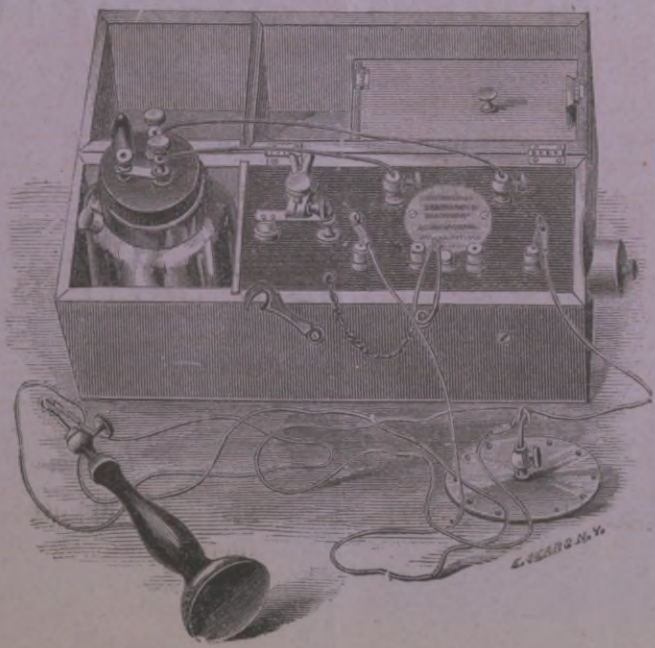
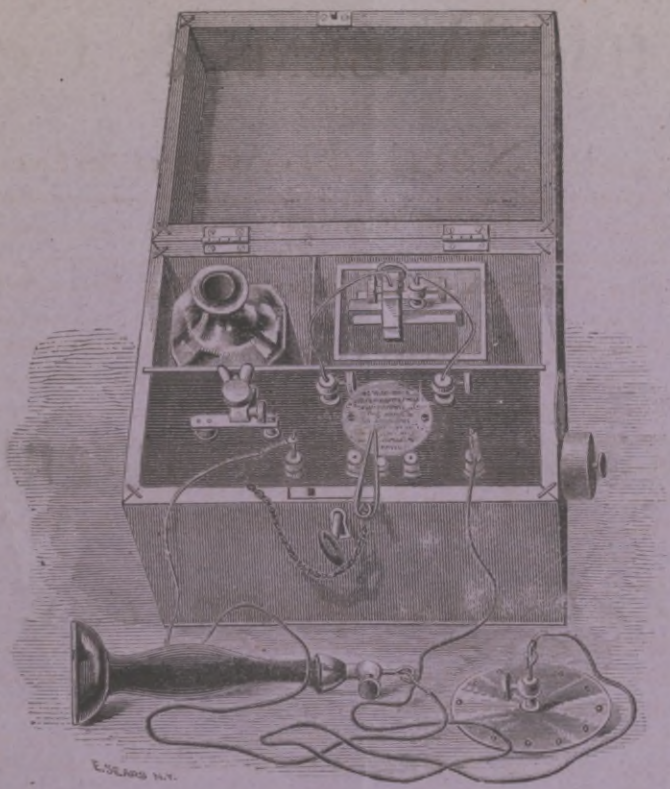
In the early stages, electrolysis or the electro-cautery offers the only safe and true mode of removal.

We may say, in conclusion, that the specimen of what we have called hydrochlorate of cruentine was pronounced to be such by Dr. S. Waterman, after examination with the micro-spectroscope.



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