

we can to-day trace the results of a protracted national contest, with its accomplished overthrow of the dominant party, the consequent loss to so many office-holders of place and means of support, while on the other hand, there is eager pursuit of office by numbers of needy men, who only meet bitter disappointment or anxious delay. And in the pursuit of the ordinary means of livelihood we have seen the laboring classes engaged in fierce and protracted contests with their employers—labor and capital at war—under circumstances which inflame the fiercest passions to the utmost tension, and inflict long periods of sorest distress upon the community. All the wear and tear of the cruel mental suffering which these events bring with them, intensified by the mobile and irritable national character, are constantly trying to the utmost the mental endurance of our people. Hundreds go down under the stress of such circumstances, after having experienced the fluctuations of hope, doubt, anguish and despair for weary months—buffeting the waves which finally engulf them, when there is no longer strength left to struggle.

It seems to be timely, in view of all these considerations, for medical men to sound the note of alarm, and to call the attention of those under their influence to the dangers to mental stability involved in American modes of life. Men must be advised to moderate their pursuit of wealth, to put away inordinate ambition, to shun the fierce conflicts of partisan politics, and to avoid being involved in labor disturbances that tend to civil war. We must insist that violent excitements and great anxieties can not be successfully endured, and that the choice of a life which involves constant subjection to those evils is a folly, and may be a crime.

It is well, at this era of our national life, for the doctor of medicine to *be* what his title implies, a teacher; and to combine, as was done in distant ages, the sacred offices of physician and of prophet. It is for our profession to utter prophetic warnings against the habits, the pursuits and the tendencies which unsettle men's minds, and bring misery upon all their future. It is our duty to point out the dangers of excited, overstrained and ill regulated mental habits. And if there be any exhortation more necessary to give than another, it is that men should lead quiet, sober, healthful and peaceable lives, as the great preventive against the increase of insanity. We must advise against indulging in exaggerated modes of thought and expression, against habitual yielding to the excitements of passing events—in fine, against the *hysterical temperament* which seems to be taking fast hold of the American people, and disabling them from seeing things as they really are—making them enjoy feeding on horrors, sensations and exaggerations of every sort—disdaining human nature's daily food, as not appetizing enough for their diseased mental palates. The public press unfortunately, is the ready provider of what they crave. Unsavory news is gathered from every quarter—crimes are recited in disguised detail; disasters are tricked out with all the ghastly coloring of the skilled chronicler—unclean gossip is not wanting, often unfit to be spoken, much less printed—graphic descrip-

tions of brutal prize fights find a prominent place—political slanders, lies and personal defamation of character are not carefully excluded. All this printed daily, with a full measure of the grotesque and coarse so-called wit and humor, goes to make up the mental food of the average American, not food for making up clean thinkers and honest workers, but tainted as carrion flesh with foulness and decay a fermenting mass, in great part, fitted to keep up the seething process when introduced, and to leaven with its unwholesomeness, a vast number of receptive minds.

Against such brain food every healthy mind revolts and habitually rejects it. But the damage done to the unstable, the weak and the uncultivated can not be estimated. To them the newspaper is a revelation of life. They study and gloat over its worst details. The dramatically presented crimes have a horrible fascination, which may become potent in drawing by imitation and suggestion, many an unstable mind into their commission. The uncultivated and undisciplined drink in the subtle poison of sensationalism as if it were wholesome food. They "read, mark, learn and inwardly digest" it. The unreal, the false and the exaggerated are the staple of their daily thinking. Their standard of morals is lowered by continual mental contact with what is debased and criminal. Habits of truthfulness, thoughtfulness and earnestness are impaired. Emotional excesses are encouraged and self-control becomes fatally weakened. In fine, the American criminal, and the American "crank" are mental recipients from the daily press of much that is best fitted to aggravate and increase their inborn tendencies to evil. And the American people is daily imbibing what is surely calculated to develop and establish what I have called the "hysterical temperament" among them. Who will reform the sensationalism of the daily press? That man will deserve the everlasting gratitude of his countrymen.

Gentlemen, in this necessarily limited Address it would be impossible to do more than touch upon a limited number of the causes which may excite mental disorders in constitutions already prepared for their development. I have accomplished the purpose in view in writing this paper, if I have succeeded in calling the attention of my fellow practitioners of medicine to their opportunities, in those families committed to their charge, of averting mental disasters and mental ruin, by the simple method of attention to their education, to their habits and their surroundings.

ORIGINAL ARTICLES.

GALVANO-CAUTERY IN DISEASES OF THE PROSTATE, BLADDER AND URETHRA.¹

BY ROBERT NEWMAN, M.D.,

OF NEW YORK.

Hypertrophy of the prostate gland is a disease from which most old men suffer. The gradual ad-

¹ Read in the Surgical Section, at the Thirty-Seventh Annual Meeting of the American Medical Association.

vance of the malady and its unavoidable complications, such as spasms of the bladder, retention by mechanical obstruction, cystitis, dilatation of the ureters, pyonephrosis and uræmia, make life a burden. A large majority of these sufferers succumb prematurely.

No rational treatment has thus far been adopted for the cure of this disease. Volumes have been written on the subject. Various methods have been suggested for the amelioration of the trouble and allaying of actual pain. A few cases have been reported as cured, either by injections, destruction, incision, enucleation, prostatotomy, etc., but no successful method of cure has been determined. Radical cures by surgery have been very few, most patients having died shortly after the operation. The great importance of establishing a method for the *radical* cure of the enlarged prostate no one can gainsay.

For the last five years I have endeavored to apply galvano-cautery directly to the hypertrophied prostate, but was unable to, from lack of a suitable instrument. Mechanics when consulted shook their heads, failed to construct the desired instrument or carry out my plans, and some declared it impossible to make my ideal instrument.

True, many difficulties had to be overcome. A smooth sound was needed of small size, easy of introduction to the spot to be cauterized. Both insulated poles had to be placed in the interior of this instrument, and the mechanism so arranged that the platinum could be heated to the desired degree instantaneously, with certainty and beyond possibility of failure. The cautery, its beginning, duration and ending, as well as the quantity used, must be under the absolute control of the operator. The platinum burner must not, in its entire length, touch anything, the heat must be concentrated, and not approach the surrounding parts of the instrument; the connections must be perfect and act promptly. The instrument must be light, small, handy, have the correct curve, and so arranged that the operator can manage the entire procedure without an assistant. The entire mechanism must be placed within the limited space of a No. 18 French scale sized tube. Next we must have a battery, so constructed as to give a certain quantity of electricity of a fixed potential, suited to the work to be done and the instrument; too high a potential will melt the platinum wires or cut the tissues like a razor; on the other hand, too low a potential will fail to heat the wire or not be effective. Therefore it is imperative to measure the electricity necessary for our work and instrument; for the same quantity of electricity under the same circumstances will always do the same work.

To fulfil these requirements in the construction of the instrument, was a difficulty which was overcome only by six months' constant hard work, trials, vexations, experiments, drawings and models, by myself and Dr. L. Drescher, to whose skill and labor I am largely indebted for the perfection of my idea. I am much pleased to exhibit and demonstrate here the result—the *galvano-cautery sound*.

The instrument is in the shape of a catheter, of smooth, polished metal, with a short curve. At the

end of its convexity is a fenestrum, in which is placed a platinum wire to be heated. This wire may be shaped differently, either straight, curved or serpentine, in order to get more or less surface cautery. The other end of the instrument is straight and forms the handle; from this end emerge two wires, the heat conductors, each of which is connected by binding screws to electrode wires, which respectively go to the positive and negative pole of the battery. The current-breaker is attached to one pole at the handle.

Any good galvano-cautery battery may be used with the instrument, but it is necessary, as before stated, to so regulate the battery that it yields the exact electrical potential to be used for the operation. I use a Dawson battery, which works to my entire satisfaction. Experiments are necessary to establish the standard. The heat must be of a high red color, just short of white heat, the instant the current-breaker is touched; this heat must be kept while the wire is in contact with the mucous lining. Less electricity is required to heat a free wire in dry air than to heat a wire held against a moist surface. The strength of the fluid is adjusted according to these requirements; the elements are immersed in the fluid to a certain depth, the electrode wires are regulated with regard to their size, length, etc.

Having determined these requirements for the operation, there will be no further trouble. It is a certainty that, in the near future, every scientific instrument-maker will construct his apparatus with the graduated measure needed, attached and regulated, so that the operator can use any measure desired. We can also use the storage-battery, consisting of a series of cells, which answers our purpose as well as for electrical illumination. This battery, once adjusted with reference to the quantity needed, works with equal power and steadiness till the stored electricity is exhausted. The last of its electricity has the same effect as the first. This instrument, though portable, is rather heavy. We may use the dynamo machine, which can be operated by hand, foot, hydraulic pressure or steam according to construction and desire. Such machine I have seen here in St. Louis at the store of Mr. A. S. Aloe (cor. 4th and Olive streets).

I repeat, no matter what kind of a machine is used, a fixed measure of electricity is necessary. You will see its action in some of the experiments; beginning with one flash of light, to be followed by several quick flashes. You have observed that the flash is simultaneous with the connection, which is important and absolutely necessary. If the wire is heated slowly, becoming warm and gradually hotter, till the desired heat is obtained, it shows that the instrument is faulty in its construction, consequently must be imperfect in its action. In experimenting with the instrument on mucous linings, we find that a galvano-caustic application of the same power acts differently according to the length of time of contact with the tissues. Thus the effects can be regulated from a light blush to the total destruction, or even amputation of the tissues.

It is a mistaken idea of many, that the galvano-cautery necessarily burns, destroys, and is followed

by cicatricial tissue. Nevertheless, this is a favorite objection of some ignorant persons and enemies of electricity. If the operator bungles, or wishes to destroy, he can, but the expert will not. It is well known that eminent neurologists apply galvano-caustic directly to the faces of young ladies, without ever causing marks. All depends on the manner of application. Even deeper applications on mucous linings may cauterize without destroying. Voltolini, Carl Michel, Shurly and Yemans, of Detroit, and many others, have applied the cautery to the nasal and pharyngeal cavities with great success. Therefore it is evident that different methods can be instituted with the instrument, and applied for various purposes to different parts.

We will now consider the application to the "enlarged prostate." Patients suffer more or less from this disease; they may be perambulant or in bed, or divide their time between bed and room; the hypertrophy may be small or extend to the size of an egg, or even an orange. Complications and pain may add beyond endurance to the sufferings. According to the state and circumstances the treatment must be selected, and the method applied. As some cases are beyond cure, the prognosis must be given cautiously, and according to the state of the patient.

The treatment which I prefer, and am now practicing, and alone recommend, and which has done good service, is the *slow* (regular) *method*. This means, give the enlarged gland a short application, from a moment to three seconds' duration; this causes not more than a white film similar to the effect of nitrate of silver, in the treatment of Desormeaux. The *modus operandi* is as follows: The instrument is connected with the electrode wires, which are then attached to the battery. The fluid in the cells must be of the right standard, and all the machinery in perfect order. When all is ready, I invariably let the cells down and try the instrument with a short flash. No matter what assurance I have of the perfection of the appliances, this little experiment excludes any possible failure. The prostatic portion to which the cautery is to be applied must have been ascertained, and the distance from the meatus measured. This distance is then marked on the instrument by a small rubber band. The patient, according to his preference, may stand erect, be on an operating table or in bed. The instrument is then introduced so that the fenestrum with its platinum wire is in contact with the part to be cauterized. The operator will know by touch when the instrument is in the right place, and the measure will corroborate the correctness of the situation. One hand holds the instrument and the other sets the battery in motion, and then touches the little spring to connect the interruptor, a flash follows, the finger disconnects the current. In one moment the operation is done, and the instrument is withdrawn. It causes no pain, and in some instances the patient scarcely believes that anything has been done. He is able to walk about and is not detained from business. In cases of very irritable patients, I have used cocaine injections, but it was scarcely necessary. The *séance* should be repeated in about three days, or even in two. The

instrument must be kept scrupulously clean, as the cautery will fail, if there is dirt between the connections.

The question now arises, how does this method bring about a cure? The end sought is, first to remove the obstruction, so that the bladder can discharge all the urine, and at regular intervals; and then, in order to make the cure radical, to reduce the prostate to its normal size. The theory is that the cautery first acts as a tonic and next as an astringent; the mucous lining shrivels up, the glandular tissue contracts, and by shrinkage the size is diminished. The stimulation gives new life and healthy action. Each repetition of the operation acts similarly, and perhaps on another part of the hypertrophy. The operation must be continued till the cure is effected. Care must be taken not to over-stimulate, and cause prostatorrhœa, prostatitis, etc., thereby creating or aggravating the very ailment we seek to cure. The cautery must be given just severely enough to accomplish the object and no more. If the cauterization is too prolonged, and too deep, the glandular action is overtaxed and weakened and will be followed by a terrible prostatorrhœa, which takes a long time to cure. At the same time an inflammation is created, which causes pain and swelling, and at last, the too greatly cauterized tissue will slough away and may cause septicæmia.

For these reasons, I prefer the slow method described, and am opposed to rapid methods, or too deep cauterizations.

The practical workings I judge by analogy, from observations of the cautery in hypertrophied tonsils. Great similarity of anatomical structure exists between the tonsils and the prostatic gland—both are glandular organs, covered by mucous lining, having epithelium; both are secretory organs, having ducts, follicles, canals, and one twelve to fifteen orifices and the other twelve to twenty small excretory ducts. In hypertrophy of the tonsils, after other remedies had failed, I succeeded by using galvano-cautery with this same instrument. The application was made in cases of children of very tender age, who stood free before me, and without any aid or force opened the mouth, and went through the operation without flinching. Not one complained of pain, all came back to have the cautery repeated, and then stood still with more confidence than at first. In these cases the immediate effect was a splendid illumination of the whole buccal cavity, and a white film was seen on the tonsil after withdrawing the instrument. The cautery could be repeated in two or three days; in one case it was done the next day. Sometimes the cautery was repeated in the same place, at other times, from preference, an adjoining place on the tonsils was selected. Almost daily observations of this series of cases convinced me that the galvano-cautery acted practically just as I have theoretically described. The patients were benefited, the tonsils diminished in size, and a cure effected. It was remarkable how soon the mucous lining regained its normal color, and when a deeper cauterization was used, there was no unpleasant slough, only a patch was observable, like in appearance to follicular ton-

sillitis. The instrument was well adapted for the tonsils, the curve suited exactly, the fenestrum could be held against the exact place to be cauterized, without possibility of burning any other part by accident.

In treatment of the enlarged prostate by galvano-cautery, it is absolutely necessary to pay attention to other symptoms and troubles of the patient, according to established principles. Pain must at all hazards be allayed; this I generally accomplish by rectal suppositories. Chas. Mitchell, of Philadelphia, prepared for me some gelatine articles which act very well. In medication I rely mostly on belladonna. The bowels must be kept regular, since constipation adds considerably to the inflammation, and by pressure causes pain. While the galvano-cautery is used, it is of the greatest importance to attend to the state of the bladder by drawing off the urine and washing the bladder out.

Another possible method, which I call the *rapid*, consists in the destruction of the obstructive part of the prostate in one séance. This is done by holding the cautery on the offending part till the cautery has burned it down and made room for the passage of the urine. The objections to this method are the immediate shock, followed by pain and inflammation, which generally cause a new obstruction, partly by spasm of the bladder and partly by the debris of the destroyed gland. There is even danger of septicæmia. At best the patient is kept in bed, in pain and anxiety, for a long time. Prof. Bottini, of Pavia, practised a similar operation with ultimate success. He constructed his own instrument, and kept up the cautery forty-five seconds. The patient was kept in bed afterwards, and on the twenty-fourth day for the first time passed water voluntarily. It took six months before he was cured. While I admire the zeal of Bottini, I scarcely think his method will become popular.

Another method is the *radical*. It consists of perineal section, and at the same time the total destruction of the hypertrophied part of the prostate by galvano-cautery. This can be done with my instrument, either per urethram, per perineum, or by a large galvano-cautery burner, or by the galvano-sling. The after-treatment consists in diligently washing out the bladder, using disinfectants, and keeping a catheter in the perineal wound. I would not hesitate to perform this latter operation, if indicated; that is, if the patient had no other chance, if it would be a risk to wait for any other procedure, and particularly if the case is complicated with strictures and consequently too violent spasms of the bladder.

A few days ago a man came under my observation, in whose case this operation would have been the only rational procedure. He had several strictures, admitting no larger sound than a No. 11 French scale, he had a calculus in the bladder, a perineal fistula, and hypertrophy of the prostate; was weak, in pain, and run down constitutionally. With such complications perineal section is the only known rational operation; in fact, no other would fulfil the indications.

Galvano-cautery has advantages over the knife, it

avoids hæmorrhage and leaves no raw surface to heal. The cautery protects the amputated surface with a scab, under which the healing process takes place.

Other Uses of the Instrument.—Though my instrument was constructed for the prostate, it has done good service in other diseases, which I will briefly mention.

Spermatorrhœa.—This disease is rare, but one genuine case was treated by applying the cautery to the ejaculatory ducts at $6\frac{3}{8}$ inches from the meatus. The applications were repeated once a week.

Impotence.—In several cases the galvano-cautery was applied to different places, such as prostate, Cowper's glands and ejaculatory ducts. The treatment was aided by other means.

In diseases of the bladder the instrument has worked admirably, particularly in villous tumor with hæmaturia, and in traumatic ulcer of the neck of the bladder. The patient had been injured, and a ragged wound near the neck of the bladder was transformed into a chronic ulcer. The place could be felt by the introduction of the instrument, the patient himself could give the best information when any instrument came in contact with the ulcer. One patient, weakened by years of constant hæmaturia, passed no bloody urine after the first application of the cautery.

Urethral granulations, denuded surfaces, and ulcers readily yield to the galvano-caustic treatment. Frequently patients present themselves to be treated for a chronic discharge, some call it leakage. I consider it error to assert that all chronic discharges of the urethra spring from strictures. On the contrary, I often find that when strictures are radically cured, the old troublesome discharge remains.

For twenty years I have treated such cases by local application through the endoscope. Generally we find chronic granulations, which yield to local, circumscribed applications of nitrate of silver, repeated at intervals. Sometimes we find denuded surfaces, which bleed at touch, sometimes chronic congestions, and even ulcers. With these affections the galvano-caustic has done better and cured quicker than the old method. The endoscope is needed to diagnose and locate the diseased spot.

Dr. Louis Sass treats *urethral strictures* by galvano-caustic, with an instrument he himself constructed.

I reiterate, my instrument was designed expressly for treatment of the enlarged prostate. I have used it since October, 1885. During those six months of use it fulfilled its purpose, and was useful in a variety of other diseases as stated. Detailed clinical histories of cases are not now given, for many reasons. Six months' work with a new instrument does not warrant in alleging an established method, or in giving reliable statistics or forming undeniable conclusions.

While the instrument has so far given me satisfactory results, yet more time is needed for observation, in order to give accurate statements and form fixed opinions. The time here allotted for reading a paper excludes a more extended statement. I hope that in the future I shall be able to complete the statistics of my new method.

The sole object of this paper is to introduce and

explain to the profession my new instrument, and to establish my method of treatment of hypertrophy of the prostate.

68 W. 35th St., New York, May, 1886.

OPERATIONS ON THE DRUM-HEAD FOR IMPAIRED HEARING; WITH FOURTEEN CASES.¹

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I will not occupy the time of the Section with a historical account of this operation, although it is replete with interest. Those facts only will be presented which are necessary to an intelligent study of this group of cases. The subjects for operation were not selected with a view to the promising nature of their cases. This method would have been more brilliant but less scientific.

If I have erred at all it has been in the opposite direction. For the purpose of making a crucial test of the efficacy of this procedure, I have made it the last resort in those cases which afforded no hope for relief from any other treatment. Perhaps the propriety of operating on these patients that seemed to promise no results might be questioned, were it not for the facts that in nearly all of them there was an unexpected improvement, and that no unfortunate consequences followed the operation. The cases I have chosen to operate on were far more hopeless than those with chronic suppurative inflammation. The consideration that the former respond so little to our efforts, while the latter are so amenable to treatment with inflations, cleansing, peroxide of hydrogen, boracic acid, bichloride of mercury, etc., with the result of not only arresting the disease, but of improving the hearing, has led me to seriously contemplate the advisability of establishing the suppurative process in proliferous inflammation of the middle ear. In but three cases in my practice has this condition followed the procedure under discussion, and I have operated more than one hundred times. It happened while I was preparing this paper. A temporary purulent discharge occurred immediately after the operations. It had the effect of keeping open the apertures, and no evil consequences followed.

In choosing the location for the incisions I have usually given preference to the section of membrane anterior to the handle of the malleus, in order to avoid the possibility of wounding the carotid artery, should the bony wall of the carotid canal be deficient, or of penetrating the labyrinth through the fenestra ovalis.

Cocaine in a four per cent. solution was employed as a local anæsthetic in very sensitive individuals. It allows sufficient deliberation on the part of the operator, for patients experience no actual pain, although they feel the knife.

Chronic non-suppurative inflammation of the middle ear existed in all of the following cases.

Case 1.—Male, 43 years old, on Board of Trade.

¹ Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Seventh Annual Meeting of the Am. Med. Association.

Said he had not been able to hear with the right ear for many years. He consulted me relative to a sudden attack of sub-acute inflammation of the left middle ear and Eustachian tube. The right drum-head was thickened, opaque, and retracted. The handle of the malleus was fore-shortened and the processus brevis prominent. There was no hearing for the watch even by bone conduction, but the tuning-fork could be heard by aerial conduction close to the auricle. I advised him to submit to an operation; but as he had no hope of receiving any benefit for his worse ear, and requested me to direct my efforts toward the better ear only, to save what hearing he had, I contented myself at first with the ordinary treatment addressed to both ears. The left ear improved rapidly, while the right remained unaffected. Before discharging him I instilled a warm four per cent. solution of cocaine into his right ear, and at the expiration of twelve minutes made a free opening in the anterior half of the membrana tympani, with Politzer's paracentesis knife. He was not conscious that any cutting was done, and gave no evidence of any unpleasant sensation, except by the remark that "The funnel seemed to press against the ear." The immediate result was that he heard my watch on contact with the auricle, and the tuning-fork five inches distant. He said it was the first time in many years that he had heard a watch with that ear. April 29th he could still hear the watch with that ear.

Case 2.—Deaf mute, German farmer boy, 19 years old, came under treatment in September, 1885, during my service at the Illinois Charitable Eye and Ear Infirmary. There was no sign of any perception of sound either by aerial or bone conduction with either ear. I placed him on a course of treatment addressed to both the middle and internal ears. For the former I employed catheterism at first, and the Politzer method later, as the Eustachian tubes became more pervious. For the purpose of imparting tone to the auditory nerves, I employed central galvanization daily. After four months of persistence in these methods, the only apparent improvement was his ability to hear the tuning-fork as it vibrated in contact with the mastoid process of the right side. I repeatedly tested his hearing in the presence of others, but he was unable to hear loud clapping of hands immediately behind the auricles.

January 28th I opened both drum-heads, leaving elliptical perforations which remained open two or three days. My record book shows the immediate result to have been as follows: Patient hears the loud voice through the conversation tube, but does not understand words. He makes an effort to reply, but the result is only unintelligible gibberish. In speaking to him through the tube, care is taken to prevent him from watching the lips, for he has acquired some proficiency in lip-reading. He repeats the vowel sounds with more or less accuracy, and if given an opportunity to watch the relative positions and movements of the lips, tongue and teeth, he reproduces the sounds with surprising fidelity.

February 1st, the aperture having closed, I opened the right membrane. Patient hears ordinary conversational tone through the tube, repeating words.