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F. W. BUTTERMANN, M. D. EDITOR — C. H. TREADWELL, B. S. MANAGING EDITOR — R. FRIEDLANDER PUBLISHER

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THIS JOURNAL IS DEVOTED ENTIRELY TO ALL BRANCHES OF ELECTRO-THERAPEUTICS

Contributions of actual experience by physicians using the X-Ray as a therapeutic agent are highly valued by this journal, and the editor is always willing to reserve space for such communications.

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American Electro-Therapeutic and X-Ray Era

Vol. III September, 1903 No. 9

Original Contributions.

PROMISING OUTLOOK ALONG ELECTRO-THERAPEUTIC LINES OF PRACTICE.*

By T. L. Barber, A. M., M. D., President of the W. Va. State Medical Association; Member of American Medical Association.

To the casual observer and cursory reader the progress and accomplishments of the medical profession are becoming well understood. In fact, the signs of the times denote a popular intelligence which no longer tolerates the overweaning confidence that used to be reposed in the family doctor. By far too many of the profession are contented with the meager smattering of professional knowledge gained by a few months of study in a school willing to give a diploma to the knowledge gained by experimenting upon the confiding public and by a casual reference to a few medical books.

There may be isolated country districts that for some years to come will be slow to get the daily or weekly newspaper and where the all-round country doctor will still be permitted to use the same old nostrums and methods that the medical men of one hundred years ago regarded progressive. But the greatest of all popular educators, the newspapers and the magazines, are surging ahead and finding a place in every home where even a rudimentary education in the common schools has made it possible for people to study out the record of human events. Thus the world is becoming familiar with the knowledge of

*Read before the W. Va. State Medical Association.

how to live and of what constitutes disease and the advanced methods and means of combatting and preventing its ravages. To keep abreast of this popular knowledge the physician must be ready to meet its expectations with rational methods. The old-time swilling of drugs and nostrums for the relief of human ills is fast giving way to more scientific procedure, many of which the people are learning to apply without the medium of the physician—often because the latter is not fitted to administer them or direct their use.

These rational methods embrace electricity, light, heat, mechanical and manual massage and psychiatry. These with the proper diet and exercise, when scientifically applied, are able to relieve and cure many of the real and imaginary ailments of humankind.

We are not unmindful of what is being accomplished through these same agencies in the minds of charlatans and self-deceived sects and cults. We cannot "pooh-pooh" their accomplishments, though we cannot but condemn the dishonest, irrational and deceptive methods resorted to by them. None of these devices should receive the condemnation of the medical profession more unsparingly than that which comes out of the distorted interpretations of the Scriptures. These cults that pretend to rely on the divine to the absolute exclusion of all rational interpositions—while at the same time heaping unblushing ridicule upon these rational methods—are the greatest menace to scientific developments and human happiness. That the suggestive influence through them does actually cure many patients, after the indiscriminate use of drugs has failed, we cannot deny. But to the educated physician belongs the curative art, and no matter what the modus operandi, it must be stripped of *placebos* and other irrational media that must only excite the distrust of an intelligent community.

All well-informed physicians now acknowledge the value of suggestion as a therapeutic measure, and it should be taught and practiced scientifically and not used as a deceptive means, so that the dignity of the profession will be preserved and the respect of the intelligent seeker after health be not lost.

No therapeutic measure of this wonderful age of progress is attracting more consideration than electricity. Though our knowledge of the existence of this wonderful power or force

has been common to the world for a long time, and though man's ingenuity has been engaged in attempts to master it and use it, still how few years have elapsed since it has become an economic and perfectly controllable power—it being the ideal power, the ideal light, the ideal heat for domestic and commercial use, a powerful and effective disinfectant, deodorizer and oxidizer for the destruction of sewage, offal and excreta, and as a means of purifying the water supply of cities, villages and private dwellings.

In the curative art electricity is being employed in a great variety of modalites, depending upon the variety, density, voltage and numerous other conditions of this current.

Electricity is now recognized as having a very intimate relation to life processes in plants and animals. Their very life depends upon the electrical conditions that surround and are within them. Physiological action and electrical energy are interchangeable. How reasonable is it, then, to suppose that we are able to restore the disturbed equilibrium (disease) of the body by supplying it with electricity from without the body.

The nervous system (brain, ganglion and nerves) is but a battery of cells with its numerous nerves as insulated conducting cords along which the nervous energy, as the electric force, is conducted; the vibrations traverse the body in every direction through the axons, which are bare of insulation (the myeline sheath) before they leave the brain and ganglia, and also where the nerve is to attach to sensory organ or muscle. All space and all substances are permeated with that which, when disturbed in its equilibrium, manifests the wonderful power or force which we call electricity. This something which we call ether is set to vibrating by this disturbed equilibrium and the disturbances thus set up are shown in the electric spark and sensitive vibrations, as when friction and chemical action are resorted to.

The laws that govern electricity are as well known as any other natural law, and much of the mystery that has surrounded this power and vital force is dispelled.

The different nerves must be the seat of different vibrations to functionate the different organs which they supply; and then again, these vibrations must vary in normal and abnormal con-

ditions of the parts they supply. How delicately poised the eye and the ear and the sense of touch and smell and taste, and how intricate the mechanism of these organs to present the wide range of disturbances that they are capable of responding to! How familiar we are with the sinchronous cords of musical instruments, which, when caused to vibrate, induce all of the same pitch or tension to vibrate.

Witness the wonders of Marconi's wireless telegraphy, which is based on this same principle of harmonic vibration, the receiver being set into electrical vibration by the waves sent out from the sending station.

How natural the conclusion that "Old Sol," the source of all earthly life, is disseminating the secret of life in such electrical vibrations as to suit the varying demands of the animal and vegetable kingdoms. How stunted and diseased becomes all life when deprived of this source of life!

From these few suggestions and the facts we know about this wonderful power, electricity, which indeed seems to be veritable life, is there a more inviting field for the physician than to study its application to the various maladies of humankind? Nor is the application of this power or force to the cure and alleviation of disease an experiment. Though the great army of physicians is quite unacquainted with its practical utility and regard it as a natural phenonenon that excites wonder and fear, there are thousands of physicians all over the world who can testify to its wonderful remedial powers, and there are tens of thousands of suffering humanity that are living witnesses of this curative agency.

It is not sufficient evidence of ability to use this wonderful therapeutic force for the physician or the patient to be conscious of a passing current, though perhaps for certain psychic effects even that may have its value. While its irrational use may not always result in injury to the patient, surely the physiological and alterative effects of the various modalties of this agency must be well understood to secure intelligent results.

Any one can start a galvanic or faradic battery and make a static machine or coil bring forth breezes or sparks and may easily show the X-ray and produce something that will pass for the ultraviolet rays. Because of this fact, charlatans and partially educated physicians are using these means to gull the

public—a surprisingly large number of whom seem to still love to be humbugged—though doubtless many seek these pretenders with real ills that should have intelligent treatment.

To be conversant with the nature and modalities of electricity as a therapeutic measure and be able to get results must necessitate close study. When an attempt to use any of its modalities is undertaken by any one unskilled in this working knowledge no good is done and possible harm results, and a wrong is done to the profession which it will take long to undo. It has its place in every branch of medicine and surgery and should receive the consideration it is entitled to in all of these. In galvanism the intelligent use of this power depends upon an accurate knowledge of the polarity of the currents. In most of their physical and therapeutic properties the positive and negative poles are diametrically opposite. The positive is acid, sedative, generates oxygen and is vaso-constrictor; while the negative is alkaline, hypersensitive, generates hydrogen and is vaso-dilator. Living animal tissue is neutral or feebly alkaline, and as it dies or is in the process of exhaustion, naturally or by mechanical or electrical stimulation, it becomes acid. Inflamed or overactive conditions of tissue short of exhaustion becomes over-alkaline. These same conditions of tissue are brought about by the application of the currents of electricity. If these electric currents produce these chemical changes in normal tissue, why not presume that the normal electrical currents which at all times traverse the body are the forces that are foremost in the body's changes, and that without these polarizing currents no change can take place in the body and life itself must cease. In fact I am ready to believe that we shall ere long have positive demonstration that the drugs we administer to correct the abnormal conditions of the body do their work by establishing such chemical changes in the tissues as to restore the disturbed equipoise of the animal electricity that has caused said abnormality or disease. On such an hypothesis, how possible and rational are the electrical treatments to which we can subject diseased conditions in order to restore the normal conditions. So it is seldom necessary to employ any guesswork or empiricism in the administration of this remedy.

What an inviting field for study and practice, then, do we find in electro-therapeutics!

It would be interesting to refer to accomplishments along electro-therapeutic lines of practice, but it would tax your time too much.

There is a growing range of usefulness in the treatment of many diseases with electrolysis and cataphoresis, based upon the fact that most metals and salts of metals are either electro-positive or electro-negative, and any part of the body can have a direct application of such a drug when placed upon the proper electrode. Dr. G. Betton Massey of Philadelphia is achieving some remarkable cures through mercurial cataphoresis in cancer of the rectum, cases abandoned to die after repeated trials with other remedies.

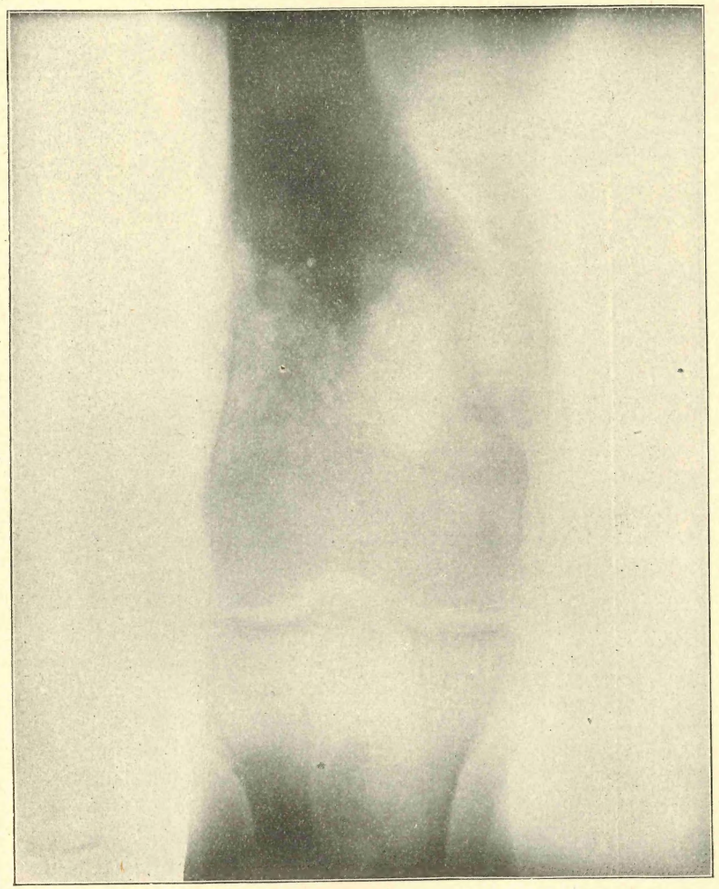
How fascinating is the outlook in the static and X-ray fields of practice! In the former we possess a powerful function regulator, a fine stimulant and tonic whose broad field of usefulness and efficacy is daily being demonstrated. In the latter we have a new and as yet imperfectly understood force—the most remarkable therapeutic agent in the past ten years, whose wonderful therapeutic effects have startled the world. As a diagnostic agent it makes the once lost foreign body, the defective bony and organic structures of the body, as plain as any surface condition.

To realize all these hopeful outlooks in electro-therapeutic practice necessitates expensive equipments and untiring devotion to study of the subject, and to be envied is the man who is fixed and fitted to enter upon it.

RADIOGRAPHS OF AN OSTEO-SARCOMA.

Taken in Cook County Hospital.

The two views, antero-posterior and lateral, are reproduced from skiagraphs of a case of osteo-sarcoma involving the lower



end of the femur. The patient, Andrew B., aged 42, gives an imperfect, unreliable history. Claims to have first noticed about four months ago a tumor appearing in the right supra-orbital region. It grew rapidly and was followed about six

weeks later by secondary growths; one at the upper, another at the lower end of the right femur.

The skiagraphs were taken with a Scheidel coil and R. F. tube No. 11, medium low, at twenty inches distance, time 2 minutes. Ortol-hydrochinon separate solution developer.

KIRK SHAWGO, M. D.

THE PHYSICS OF THE "MININ" RAYS.

A Correction to an Article in Our August Issue.

I notice in the August number of your esteemed journal an article on the uses of the ultraviolet ray. I hardly know what to think about this article. The author's ideas about ultraviolet rays are a peculiar mixture of misconceptions and positive errors. I am sure that the author has never worked with the spectroscope and he certainly has not read Finsen's classical essays on "Chemical Light." My admiration for Finsen and his immortal work prompts me to offer these few lines in defense of Finsen against well-meaning but ill-informed amateur-phototherapeutists.

The writer of the article makes this statement on page 290: "Hence it is deemed necessary to-day to get the best results in smallpox that the patient be confined in a room having nothing but red rays of light." To say the least, this statement is misleading. The writer seems to think that the presence of the red rays is the curative factor in the treatment of smallpox and the prevention of pitting. The red rays *per se* have nothing to do with the case. The idea is to *exclude the chemical rays.* This being done, it makes no difference what rays are admitted. In filtering the solar spectrum red neutralizes the chemical rays and in this way helps to eliminate the destructive elements of sunlight. This is all there is to it. (See Finsen's article on "The Elimination of Chemical Light in the Treatment of Smallpox.")

On page 291 the writer speaks of ultra-red rays. There are no such rays. He evidently means infra-red rays.

On page 292 the writer speaks of "ultraviolet glass." I wonder what he means by it. The term "*ultra*-violet" specifies the spectroscopic location of the invisible portion of the chemical band. Being situated *beyond* (ultra) the violet band, these invisible chemical rays are called *ultra*-violet rays—i. e., rays *beyond* the violet band of the spectrum. Ultraviolet color does not exist because the ultraviolet rays are invisible. The vibrations of these rays are too rapid and short to engage the molecular elements of our visual apparatus. In view of these facts I am utterly at a loss to know what the writer means by "ultraviolet glass."

The writer's statements about the so-called Minin-rays are one continued unintentional misstatement. To begin with, Minin-rays have nothing in common with Finsen-rays. Finsen-rays are the concentration of the actinic and the ultra-actinic fields of the solar or arc-light spectrum. There is but little difference between the spectrum of the sun and that of the arc-light, the real difference being one of degree of intensity, but not one of spectral analysis. The spectrum of the incandescent light of Minin is almost entirely lacking in chemical (actinic ultraviolet) rays, but rich in thermic (red) and moderately endowed with luminous rays. Whatever chemical rays emanate from the Minin reflector are largely absorbed by the glass-globe. The Minin apparatus is distinctly a heat producer and all of its therapeutic effects are due to the thermic rays, supported by a moderate supply of luminous rays. The heat rays relax the arterial walls, increase the arterial blood supply, augment oxygenation and stimulate the metabolic functions of the affected region. In this way they promote excretion of foreign material and stimulate granulation. Their alleged germicidal action is due to the regenerating influence of oxygen in the arterial blood. The Minin apparatus does not perform its work through the ultraviolet rays, simply because it does not produce any. It is not a modification of Finsen's apparatus. It has nothing whatever to do with it. It would be just as logical to consider an acetylene lamp or a bonfire modifications of Finsen's apparatus. They all produce light of some kind. That is the only point of resemblance.

The Minin apparatus has a sphere of usefulness of its own. As an anodyne it is excellent. In rheumatism, lumbago, etc., it is an indispensable adjunct to the treatment. It will cure indolent ulcers, acne and various skin troubles. I am not prepared to say that it will do any good in genuine lupus cases. There have been cases recorded in which the Minin ray did the work. I rather question the diagnosis in these cases. I believe that they were cases of indolent ulcer and not of lupus. I use the Minin apparatus and Finsen's device every day. There is hardly a subject I am more familiar with than the clinical and physiological indications of these photo-therapeutic methods. In conclusion I beg to state that Minin was never a pupil of Finsen. Minin is professor of military surgery at the University of St. Petersburg and senior surgeon of the imperial guard. He is a much older man than Finsen. Minin at no time refers to his thermic rays as being chemical or ultra-violet rays. Both Finsen and Minin are great photo-therapeutists, but have labored in the interests of two entirely distinct parts of the subject.

In subjecting the article referred to to criticism I did not mean to refer to the author in a disparaging way. He, like many others, is the victim of the chaotic condition from which the knowledge of modern photo-therapy has as yet not emerged.

OTTO JUETTNER, M. D.

Demonstrator of Photo-Therapy at the Cincinnati Post-Graduate School of Physiological Therapeutics.

THE ROENTGEN RAY IN THE TREATMENT OF LUPUS.

The Early Work of Dr. Schiff.

In a dissertation by Dr. Schiff before the sixty-ninth convention of the German Natural Scientists and Physicians at Braunschweig he dwelt upon the encouraging results attained in the hospital at Eppendorf from the application of the Roentgen ray treatment, such as are herein described by Dr. Gocht, assistant surgeon to Dr. Kümmell, principal of the New General Hospital in Hamburg. It appeared that a number of cases had been reported shortly after the discovery of X-rays by Professor Roentgen of Würzburg in 1895. Drs. Schiff, Freund and other eminent practitioners had treated lupus vulgaris and other cutaneous diseases with X-rays. The following is that of a young man R., aged 20, who is not tainted

hereditarily with abnormal affection, had always enjoyed good health. He first complained of illness in January, 1895, and from that time on was constantly under medical treatment. During this period several inefficient attempts were made to excise the lupus with sharp spoon and iodoform indications, also through cauterization with the paquilin, and as well as acidulous etchings, such as nitric acid, etc. In 1896 the patient was treated with tuberculin in small doses. Fever became often apparent; an angry red zone became visible at the edges, while painful swellings of a gland between the shorter plates were manifest.

About one cm. below the nasal root the nose is diffusedly colored in small red nodules. Upon the middle part of the nasal bridge on the side part of the nose, into the naso-labial folds and upon the septum narium about ½ cm. wide upon the upper lip, overreaching and diffusing itself into the nose, these small nodules ranged in size of millets to that of a pea. The nodules upon the nasal bridge and those of the left nasal wing are to some extent softened and exuding purulent matter, while some are of bloody epidermic scales and thick scabs consisting of dried secretions. The lower third of the nasal bridge and the extremity of the nose are relatively free from taint of disease.

The treatment of the patient P. consisted in placing him upon a table. A leaden mask was affixed about the face with an aperture for allowing the X-ray to play upon the parts affected. The tube was placed some 25 cm. above the face. The pressure of the current did not exceed 20 volts and the amperage not more than 5 amperes. The daily continuous applications to X-ray exposures were from 20 to 30 minutes. The patient experienced no uncomfortable sensation during the treatment. On the 4th day of April, 1896, about the seventh day after the beginning of the application of the X-rays, a distinct reaction manifested itself in the form of a very highly colored blotting of the parts exposed to the X-ray and quite conformable to the aperture cut out of the mask. On the 8th day of April a highly suppurative and purulent dermatitis was developed.

This treatment was now arrested so that the dermatitis might be healed up. After a complete recuperation of the inflamed processes a marked improvement of the original disease could be noted. In place of the ulcerated, morbid growth of the lupus a new and healthy cuticle became apparent without exhibiting any scars.

The previously noted nodules were partially obliterated and dried up. But it was not deemed that a complete cure had been manifested, hence the treatment was continued in the manner aforesaid. The moment when the reaction became too violent and a new dermatitis was anticipated the X-rays were invariably set aside and again only applied when the inflammatory symptoms had subsided. This procedure was continued for eight months, inclusive of the several pauses when no X-rays were administered.

We now observed a slow but constant abatement of all lupus morbidity. The nodules became more and more contracted and finally disappeared entirely. The acute inflammation of the skin which we observed in the beginning did not return. As a reason it seemed not that the skin was not disposed toward an inflammation and because we guarded that no reaction should exceed the condition of a general hyperaemia. Nor were there any disorders noticeable.

The next case is that of a woman aged 48, with no heredity anomalies. Suffered 17 years with rheumatism, otherwise healthy. Patient complained since past two years with the growth of nodules upon her right cheek and ulcerations issuing from the right nasal orifice. The right side of the cheek is covered with angry red blotches the size of five-dollar gold pieces, while the to be infiltrated nodules at their peripheries appear less disseminated, and otherwise falling away with the inflamed decadence. Another nodule the size of a penny is noticed at the corner of the mouth, while a number of similar nodules appeared on the septum narium and adjoining part of the filtrum of the upper lip. The affection penetrates from the right side of the septum narium into the interior of the nose. Two extensively large swellings of glands are noted on the neck in the region of the submaxillaries, which are quite hard. The treatment, as stated above, began on the 20th of May, 1897. On the 25th, or fifth day thereafter, the reaction showed the highly colored parts of the exposed surface under the X-rays, which became quite acute about June 6 and turned

into a severe condition of dermatitis. The X-rays were stopped and alternately resumed after the subsidance of the dermatitis and continued this treatment for six months, and finally attained the same results as in the case of R.—i. e., the gradual diminution and shriveling of the nodules and securing a healthy skin to the patient. The swollen glands on the neck also subsided and gradually became normal.—*Translated from Fortschritte auf dem Gebiete der Roentgenstrahlen.*

ANSWERS AND OBJECTIONS TO DR. A. A. O'NEILL'S PAPER, "X-RAY ERA," JULY NUMBER, ON ELECTROLYSIS IN URETHRAL STRICTURES.

BY ROBERT NEWMAN, M. D.,

Professor of Electrotherapy, New York School of Physical Therapeutics; Chairman Executive Council and ex-President of the American Electro-Therapeutic Association; Associate Editor of Advanced Therapeutics; Consulting Surgeon Hackensack Hospital, N. J.; Bayonne Hospital, N. J.; McDonough Memorial Hospital, German Dispensary, West Side, N. Y.; Home for the Aged and Infirm, Yonkers; Honorary Member Ulster County Medical Society, Honorary Member Danbury Medical Society, Honorary Member Berlin Cremation Society; Formerly Chief of Surgical Clinic and Prosector in Long Island College Hospital; ex-President Alumni Association Long Island College Hospital; Corresponding Member Gynæcological Society, Boston; Member of American Medical Association, New York State and County Medical Association, New York Pathological Society, etc., etc.

In the July number, 1903, of the American Electro-Therapeutic and X-Ray Era appears a flourishing article by A. A. O'Neill, M. D., of Chicago, in which the author wishes to show

that electrolysis cannot be successful in the treatment of urethral strictures. We only agree with him that it needs an expert operator in that particular line to succeed, and neither myself nor anybody can be made responsible for blundering attempts. A good surgeon may not be an electro-therapeutist and utterly fail with electrolysis for want of experience and knowledge of the first principles of physics and chemistry. The writer, in his articles, has often warned that persons who do not understand the method and have only heard or read about it should not attempt the performance of electrolysis. It is impossible to illustrate here in a limited space the fallacies of the paper, and it must be stated here that the success of electrolysis in the treatment of urethral strictures is certain and fully established, for which the writer offers the following facts and quotes the statements of others as follows:

The following is from an editorial in the New England Medical Monthly:*

"Not long ago physicians and surgeons of repute flouted the treatment of urethral strictures by electrolysis. Now it is so generally and successfully practiced that scarcely any one opposes it. This change of opinion is undoubtedly due first to the better understanding of the electrolytic treatment as distinguished from galvano-caustic.

"The successful treatment, without relapse, of a large number of cases is fully reported by many physicians of high repute.

"It is undeniable that the method now adopted was first grasped and put forward by Dr. Robert Newman of New York, who, despite the misrepresentations and abuse of the ignorant, has zealously labored for eighteen years to perfect the instruments used and the technique of the operation until by extraordinary success the most skeptical are convinced. Experiments in the treatment of strictures with electricity have been made since 1847, and until 1872 without any method, except such as destroyed tissues by too strong currents. Mallez and Tripier called their method galvano-caustic, showing

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* "What Is the Present Status of Electrolysis in the Treatment of Urethral Strictures?"—New England Medical Monthly, December 15, 1887.

that they used a current with caustic, not electrolytic action, and therefore they naturally failed.

"The present method is electrolysis, with weak currents applied at long intervals, resulting in galvano-chemical absorption, known and recognized as Newman's method. Newman also introduced and perfected instruments for use in the operation so that failure in the operation is hardly possible."

In England eminent surgeons so fully comprehended and acknowledged the great value of this method that it is taught at the medical schools as one of the ways of treating urethral strictures. In St. Bartholomew's Hospital an additional department has been established for treatment in this way, and many successful cases have been reported by Drs. W. E. Steavenson and W. Bruce Clarke.*

"Like all of his recent papers, this one of Dr. Newman's is interesting, and there are a considerable number of men who share his views and approve of his method."

Dr. G. N. Rohe, Baltimore, said:†

"Dr. Robert Newman of New York has been the most prominent advocate of the method, but the treatment by electrolysis has won for itself a place in genito-urinary surgery which it will maintain. The evidence in its favor is too strong to be ignored."

Dr. W. E. Steavenson‖ says, Cantal gives in his text-book the subject particular attention, and says on page 76, "During the last decade it has been developed and improved by Dr. Robert Newman of New York to such an extent that it has now become one of the recognized modes of treatment of strictures." In his book he gives a full description and the success of electrolysis of stricture on pages 76, 88, 91, 116, 149, etc., and also in the treatment of gynecological cases.

Debedat‡ and many French surgeons conclude that electrolysis is a truly curative procedure as regards urethral strictures, which are by it attacked alone without injury to the healthy urethra. None of the cases hitherto observed have called for further surgical treatment.

Dr. C. S. Neiswanger's remarks at a clinic in Chicago ‡ at the Illinois School of Electro-Therapeutics—"organic strictures located in any part of the body can be successfully absorbed by electrolysis. There is a certain technique laid down for the treatment of these cases by my friend, Dr. Robert Newman of New York, and I find that just as long as I follow that technique just so long do I have results similar to these recorded by Newman. Just as soon as I deviate from it I do not have the same good results."

Editorial—Charlotte Medical Journal:§ "If, however, an operator is ignorant of the technique and instruments he certainly is liable to do all the mischief possible."

Similar remarks from editorials and authors could be quoted ad infinitum, and it certainly proves that many have had success with electrolysis in urethral strictures.

Now a few words of the writer's statistics. He has used his method of electrolysis for thirty-six years and cured thereby 2,500 cases, without having heard of a failure or relapse. He also, years ago, compiled 1,755 successful cases in the practice of fifty-four different operators.‖

In the same number of the Journal in which this was published appeared an editorial, from which the following is quoted:

"The statistics accumulated by Dr. Newman would cover a list of over 2,000 cases of urethral stricture treated by the electric method. In the face of such a mass of positive evidence one is tempted to explain the dissent existing by the application of the personal equation. Still, every one has his right of opinion and free expression, and if the opponents of this method desire it, the columns of the Times and Register are equally at their service." No statements of dissent have been made.

Statistics each of series of one hundred cases have been pub-

* Medical and Surgical Reporter, Philadelphia, June 8, page 695. Editorial—Medical and Surgical Reporter.

† Atlanta Medical and Surgical Journal, July, 1888, page 296.

‖ "The Uses of Electrolysis in Surgery," by W. E. Steavenson, London, J. & A. Churchill, 1890.

‡ British Medical Journal, January 22, 1898.

‡ The Medical Standard, 1900, and The Critic, September, 1902.

§ January, 1903.

‖ Times and Register, Philadelphia, April 8, 1893.

lished in detail with documentary evidence. These statistics, letters and documents have been investigated by a special committee. This committee have pursued their investigations for nearly a whole year, very carefully and impartially examining the documentary evidence, read the letters concerning it, corresponded with former patients and their physicians in America and Europe. The final report made in the transactions of the American Electro-Therapeutic Association for 1893, page 40, was, verbatim, as follows:

"We have examined the records of Dr. Newman's cases and regard his conclusions as well sustained by the statistics, and as far as our experience in this line of work adds further testimony it is confirmatory of the value of the continuous currents in resolving a large class of urethral strictures," etc.

This report is signed by Drs. A. H. Goelet, Wm. J. Morton, New York, and W. J. Herdman of Ann Arbor. That under some circumstances some medical critics throw doubt on the correctness of the statistics appears almost a willful libel. Many of these patients have been kept under observation, and have been re-examined after years, and no repalse followed. Most of these, after twenty-five years' interval, can be found today stating that they have been kept well without having had a relapse. In a few instances a patient returned after years with a new ailment, mostly of the prostate or bladder, but never had a stricture in the same place which had been cured by electrolysis. During these years the writer has never lost a patient by death while under treatment for a stricture. Death, however, followed in every instance when a patient gave up the electrolytic treatment by the writer for the sake of undergoing an urethrotomy, which in these cases was never performed by the writer. Dr. F. B. Bishop of Washington, D. C., has reported more successful cases in the Virginia Medical Monthly, June, 1893, in which he says: "After a constant experience of eight years, I am thoroughly convinced that the treatment of stricture of the urethra by electrolysis is the best method now known to the profession." In another part of that article Dr. Bishop says: "Dr. Newman of New York has used this method about twenty-six years, and during that time he has treated numbers of cases with uniform success. Leading surgeons throughout the country have been severe in their

criticisms of Newman's method and have cast a shadow of doubt upon the claims of Dr. Newman. On the other hand, he has been supported by many men of prominent standing in the profession, both in this country and in Europe, who have taken the trouble to become familiar with the method and have practiced it successfully. Some of the critics, I think, have been unfair to Newman, inasmuch as they are hardly inclined to give him credit even for sincerity in the report of his cases cured, but content themselves with a wholesale condemnation of his method because they have tried it a short time and failed to cure their cases."

This should be evidence sufficient to establish the success of electrolysis in the treatment of urethral stricture. The writer will refrain from aggressive personalities in treating a strictly scientific subject, but defend himself against the unjust attacks made by Dr. A. A. O'Neill. On page 240 is a statement that dissolution of tissue is the result of chemical galvanocaustic. That is true when improperly done. If properly performed, however, any caustic effect must be avoided and the technique conducted in such a manner that only an absorption is caused without a caustic effect. Next he speaks of an irritation, which the writer has always advised operators to avoid.

The dangers described on page 242 can only occur in the experience of a tyro, and never with an able expert. Inexperienced practitioners should never attempt an operation they do not understand. The tirade about cicatricial tissue on page 243 is superfluous, as the writer never has spoken of it in his articles, nor caused cicatrices. Their removal is an art which may be accomplished only in certain cases and by experts. This, however, is not under consideration. On page 244 is an insinuation as though the writer claims the invention of electrolysis. On the contrary, he has given a full history and wonders that any practitioner is ignorant of the effects of electrolysis, which are described in every text-book on physics. He has mentioned all the efforts made in that direction, but certainly claims the originality of his method, technique and the instruments made for the proper execution of the method.

The language of Dr. O'Neill is extremely unfair and insulting, and if he had read former articles of the writer he could not have made those statements. On page 245 are similar un-

fair statements. We will not discuss the experiments of Dr. O'Neill. The cases he reports are the most unfair statements that can be imagined and cannot be convincing. The patients have all been under treatment with electrolysis by other practitioners, and they may have been good surgeons, but he does not show that they understood the effective technique of electrolysis in the treatment of strictures or in gynecology. In the very meager history of the cases we find one case of a probable prostatic disease. Case 2—Troubles may be caused by a catheterization. In case 3, an undue force has been used. Case 4 was treated for a long time by two different operators. Case 5 appears to have been handled badly. This as well as some of the following are gynecological cases, which to consider would be unfair and take up too much space. Next Dr. O'Neill assails the writer's veracity in a case reported by Dr. Tuttle, which many lawyers may declare a criminal libel. The reader may be informed that the specimen in question of a former rectal stricture, operated by the writer, was presented at a meeting of the N. Y. Pathological Society, and all the members present on that occasion did examine it and found it as represented. Hence it is reported accordingly in the minutes of the society.

It is beyond comprehension how a gentleman could make such unfair and deliberately insulting statements. There may be another object and the writer does not feel inclined to throw dirt or to be personal in scientific matters. The unbiased will conclude that electrolysis as a chemical absorption is a fact which will and must succeed in the treatment of urethral strictures.—*Journal of Advanced Therapeutics.*

465 Lexington avenue, New York.

EFFECTS OF ELECTRIC CURRENTS AND SO-CALLED LIGHT RAYS ON BACTERIA.

The declaration made in a modern text-book that continuous electric currents are bactericidal is one that requires considerable modification inasmuch as it is capable of causing a vast deal of mischief. While the statement may be partially correct, various observers have demonstrated that degree or quantity is a factor which claims recognition in an estimate to determine the bactericidal power of the electric current.

In 1901 Zeit conducted some very thorough experiments by which he demonstrated that bacteria of low thermal death rate were killed by exposure to currents from two hundred sixty to three hundred twenty milliamperes for ten minutes, but that a current of forty-eight milliamperes has no bactericidal effect, even if continued for two or three hours. On the other hand, currents of one hundred milliamperes will kill non-resisting bacteria "by the production of electrolytic germicidal products" if continued for seventy-five minutes.

Electrodes are rarely sterilized between employments in routine practice; indeed the construction of these appliances is usually such that the only reliable method of sterilization—boiling and steam under pressure—cannot be utilized. In genito-urinary work the most essential precaution is to prevent the introduction of septic material into the genito-urinary tract. Currents of the strength mentioned are certainly seldom, if ever, applied to the region designated, as only a few milliamperes are required to disrupt a stricture. The irritation produced by electric currents constitutes a focus for infection, which is almost certain to occur if the electrode is not aseptic. Happily this method of treatment is fast being relegated to oblivion.

"The continuous current produced by polarizing electrodes and the exclusion of the effects of ions is neither bactericidal nor antiseptic." Tesla currents also prove negative as regards germicidal properties "when passed around a bacterial suspension within a solinoid." Ozone, when brought in contact in sufficient quantity, destroys bacterial life. The amount necessary to cause death may be obtained from high-frequency coils or from so-called brush discharges. The X-rays will kill many

varieties of bacteria in plate cultures, providing the exposures are continued twenty to thirty minutes. Ultraviolet rays, as is now quite well known, are bactericidal. In the treatment of lupus vulgaris, according to the specifications of Finsen, the patient is subjected to ultraviolet rays for an hour and ten minutes, on successive days, until an apparent cure is effected. The patient is requested to report any manifestations of recurrence of the condition, and the claim is maintained that only one or two per cent of six hundred cases of lupus vulgaris treated at Copenhagen have resulted in failure, the greater number of which were attributable to faulty treatment.—*Editorial Comment in the July Physician and Surgeon.*

THE TREATMENT OF MALIGNANT DISEASES BY ELECTRICAL METHODS.

A Discussion Before the British Medical Association.

The president, Dr. H. Lewis Jones, took a conservative position regarding what had been really proven: "In looking through the published records of the use of the X-rays in cancer one cannot help feeling surprised to find how few of the alleged successful cases have been so recorded as to carry to those who read a reasonable conviction of success, and this, too, in spite of the fact that numbers of people are working at this subject and scores, if not hundreds, of cases have been treated. Half a dozen cases of unmistakable cures of undoubted cancer, if minutely reported, would be worth more just now than any number of vague statements about partial improvement, favorable effects and the like. The more one examines published statements the more suspicious one becomes. In most of them there is some flaw in the evidence. Either the diagnosis is uncertain or the patient is not more than partially relieved at the

time of writing, or he has been so unfortunate as to die from some intercurrent disease. It is greatly to be wished that all medical men who have recorded favorable cases will periodically supply further notes of the later progress of their patients. In short, while there is a quantity of evidence to support the contention that the X-rays act beneficially in malignant disease, the amount of evidence to show that cures have resulted is lamentably meager."

The writer suggests a possible explanation for this failure of complete cure as due possibly to some fault in the technique, to the choice of cases or to some fundamental condition which is at present entirely unknown. Regarding the technique he raised the question whether the high tube or the low tube should be used or whether we must learn that some tubes do not give out the curative rays, even though the vacuum may be the one desired. It is also possible that failure is due to a lack of perseverance in the treatment. Another unsettled question is whether or not it is desirable to cause a dermatitis. Observers differ very markedly in their views.

Personally he recommends that all the opaque masks should be avoided, because these might prevent the rays from reaching some remote focus of the disease. He uses a medium tube with the anti-cathode red-hot. He avoids dermatitis. He treats the patient three, four or five months. The primary growth should be thoroughly excised and then the ray treatment should follow immediately. In the discussion which followed a number of the members reported that their cases were progressing favorably, and there is every reason for hoping an ultimate cure. Several spoke favorably of the high frequency current and the static treatment, although no detailed cases were reported.

Editorial.

We print in full the article that appeared in the August issue of the Journal of Advanced Therapeutics, by Dr. Robert Newman, in answer to Dr. O'Neill's article of our July issue. It will be of interest to those who are using galvanism in the treatment of strictures. We should be very glad to promote a free and thorough discussion of the subject. We certainly are inclined to state that two thousand five hundred cases of strictures cured by any agent and vouched for by impartial observers would be as fine a confirmation for a method of treatment as could be desired, and if the galvanic treatment is so uniformly successful, then there is no excuse for the employment of surgical means, to be followed by a long course of dilation.

Unfortunately, however, the genito-urinary specialists do not seem to be using this method, and, in fact, have concluded that it is not as efficient as dilation or urethrotomy. Thus Keyes and L. Bolton Bangs of New York both condemn the method, Dr. Keyes having tried it in conjunction with Dr. Newman, as reported in Rockwell's Treatise on Electro-Therapeutics, page 574. In future issues of our journal we shall endeavor to obtain statements from other genito-urinary specialists concerning their results in the use of the galvanic current, or abstracts from their published papers. Dr. O'Neill will reply to Dr. Newman in our next issue. We shall welcome also fully detailed reports of such cases.

An electro-therapeutic journal should aim to establish the truth in this field of medical research and practice. We are not hostile to the use of galvanism. On the contrary, this journal would be only too glad to have it thoroughly established, but we are unwilling to let any personal regard for electro-therapeutics lead us to advocate a measure which has been found wanting by most of the recognized authorities.

It is very interesting for the radio-therapist to contrast the favorable comments given to the therapeutic work of radium by the conservative journals as compared with their judicious stand with reference to the uses of the X-ray. Let us wait for the same length of time before saying that this new agent should be used for other than experimental purposes. Already one drug firm has advertised "radium bulbs for the treatment of cancer, lupus and other diseases and for experimental work." In the field of physics, however, radium is of very great interest and value in broadening our knowledge of radiations and possibly in furnishing one more proof of the divisibility of the atom. It was indeed a bold conclusion arrived at by J. J. Thomson, after much experimentation, that in the cathode stream we have a swarm of corpuscles into which the atoms of the gas of the tube have been divided. It has already been proved that the radiations from radium consist of an "emanation" which can be condensed at very low temperatures and which, therefore, seems to be matter instead of radiant energy. Various scientific journals contain reports of this work which show that we are soon to have our knowledge of electricity and of matter much extended.

NOTICE.

The first regular meeting of the Chicago Electro-Medical Society after the summer adjournment will be held in Room 301, Schiller Bldg., Tuesday, Sept. 29, at 8:15 p. m. A paper will be read by Dr. Noble M. Eberhart on "The X-Ray as a Beautifier." All members should be present.

THE VALUE OF THE STATIC MACHINE AS A THERAPEUTIC AGENT.

By H. N. Chapman, M. D., in the Courier of Medicine.

The author compares the voltage and amperage of the galvanic and faradic currents with the discharges from a static machine, showing that in the galvanic current the voltage is lowest and the amperage highest; in the faradic current the voltage is increased and the amperage correspondingly is diminished; in the static discharge the voltage is very high and the amperage only a fraction of a milliampere. He also contrasts the therapeutic uses of these three forms of electricity; galvanic current for chemical effects; the faradic for muscular contraction; the static current for functional effects.

He notes the following symptoms exhibited uniformly by the patient under static treatment: Deeper breathing, marked tendency to perspire after fifteen or twenty minutes the atonic sedative effect—for a fidgety person becomes quiet and distinctly sleepy. A great amount of oxygen is absorbed and carbon dioxide exhaled. A greater amount of urea is excreted in the twenty-four hours, though the volume of urine is not increased. The digestive functions are stimulated and the appetite good.

EFFECT OF THE DIFFERENT FORMS OF STATIC TREATMENT.

The breeze and spray affect the vaso-motor nerves; capillaries contracted, temperature of skin reduced. The respirative processes in skin diseases are increased. These treatments also stop pruritis and relieve pain. The pain of carbuncle was relieved and the patient gained sleep after fifteen minutes spray over the affected part.

The spark treatment produces the deep contraction of the muscles if the spark is given over a motor point. At first the capillaries are contracted, then afterward dilated. Chronic pains are relieved, old exudations are caused to be absorbed and stiffened joints are loosened up.

HISTORY OF A CASE.

H. C., aged 55 years, became a confirmed neurasthenic two years ago, with frequent suicidal inclinations, especially desiring to kill himself with a shotgun. He had traveled seeking

health, and during the past eighteen months had been treated by one of our best general practitioners. He was urged by his friends to come and take electrical treatment, but was prejudiced against it and refused. Finally, to relieve himself of their solicitations, he spoke to his physician about it, and was informed that electricity was not suited to his case and under no circumstances to take it. This silenced his friends and the matter was allowed to drop for six months. At that time, a little over a month ago, I was called to see him. I found a man, elderly in appearance, of spare habit, in bed, where he had been for twenty-four hours, languid, falling away into a dozing condition, but easily aroused. The pulse was rather slower than normal, temperature normal. The heart and lungs gave negative results; the tongue was furred, bowels constipated, skin dry; appetite variable, digestion not good. The slightest mental or physical exertion caused his mind to become chaotic and he could not then concentrate his attention on the subject in hand.

He wanted to know what electricity would do for him. I told him to come and see me and I would ask him to give me a trial every day for one week, and then three times a week for three months, and if at the end of that time he was not materially improved I would not continue treatment. He was not able to get out for a week after I saw him, and then he came.

I began treatment and pursued it vigorously (using the wave current applied over the epigastrium or lumbar and sacral, or cervical and upper dorsal), and in four weeks, in all about fourteen treatments, he has been enabled to go back into his office and take up his business, that of a title examiner. Every function has been restored. He has an appetite, as he says, like a horse; digestion normal, bowels perfectly regular and the stools normal in appearance. He sleeps soundly all night and wakes refreshed. His mind is alert and active; grasps the problems of a title and no sense of confusion or mind weariness.

Last Monday, just four weeks from commencing of treatment, he went to the courthouse and worked from 8 a. m. until 2 p. m. over a very difficult title, apprehensive that he could not complete it, finished it, went to his office and worked

until 5 p. m., writing it up, ate supper, went to bed at 9:30 p. m. and slept, as he said, like a babe all night, awoke in the morning and reached his desk at 8 o'clock. The only inconvenience he felt was a slight muscular soreness; but remember that this was the first day's work at his desk for two years.

One curious phenomenon occurred after the fifth or sixth treatment. The patient had not perspired for a year in a normal way, and not at all for months, even after physical exertion, but just at this time, a warm day occurring, he worked in the garden and perspired freely, which surprised him very much. That night, after a bath, he "shed his skin," as he expressed it. The epidermis peeled off in such quantities and such large pieces that it blocked the opening in the bathtub as the water ran off.

It would be difficult indeed to attribute this result of static treatment to suggestion. It was not suggestion, for I promised him nothing, and he came because his wife insisted upon it. He is practically a perfectly restored man. There is nothing in the whole range of therapeutics, to my knowledge, but static electricity that would have accomplished it.

DISEASES IN WHICH STATIC TREATMENT WILL BE OF VALUE.

It is especially indicated in all chronic conditions of malnutrition and functional nervous diseases, in neurasthenia and neuralgia and nervous headaches are rapidly controlled by it. It is of the greatest value in chronic sonolitis, rheumatism, chorea, lumbago, sciatica, slow convalescence may be materially hastened.

An indiscriminate use of the different forms of treatment will result in failure. Each case must be studied and the treatment changed as the indications point.

REPORT OF A CASE OF ALVEOLAR MELANOTIC SARCOMA.

Reported by Edwin Walker, M. D., Ph. D., Evansville, Ind.

The case which I desire especially to report was so remarkable in its course and termination as to be for me an epoch in my professional life. No previous experience has produced so profound an impression. To see a rapid-growing sarcoma heal in a short time under any treatment is truly extraordinary. Such patients are doomed in spite of any known application of remedies. Here was a man grasped from certain death before my very eyes—can you wonder at the deep impression made?

The fortunate subject of this sketch was Jacob Saelwachter of Wadesville, Ind. He was 31 years of age and a farmer. He came to me Feb. 20, 1902. On the right cheek, just in front of the ear, was a black tumor protruding from the surface, one and a half inches in diameter. There were no enlargements of the glands in the neck. Under cocain anesthesia the growth was excised well out into healthy tissue. The wound was united with silkworm-gut sutures. It never healed.

Evidences of return could be seen in two weeks, small black spots appearing about its edges, and about this time an enlargement appeared under the angle of the jaw, which grew with great rapidity.

March 22, under general anesthesia, I made a second operation, excising the old wound widely. The incision was continued to the neck, and I removed the tumor, which had extended deep down between the vessels to the vertebra. The sterno-cleido-mastoid muscle was infiltrated for more than an inch. The diseased portion was thoroughly excised. At various points in the bottom of the wound black places could be seen. These were curetted, only to reveal the greater depth of the infiltration. The operation had lasted nearly an hour, when I concluded the complete removal was impossible. The wound was packed in gauze. There was no infection, still it was soon evident that the morbid process was again advancing. The wound showed no disposition to heal, and the surrounding tissues were rapidly infiltrated.

On May 1, as a last resort, it was decided to try the X-Ray. It was really a forlorn hope, for it seemed almost impossible to favorably affect a mass which was now hard and extended

to great depth. The gaping wound was two inches deep, covered with sluggish granulations, and the side infiltrated, involving almost the entire neck on that side.

Considering the gravity of the case, it was decided to push the treatment, even at the risk of causing some painful reaction, the danger of a burn having been fully explained to the patient.

The current was generated by a static electric machine. The tube was a "Gold Medal," No. 3572. It was high most of the time. At first the tube was placed at six inches from the patient, but later it was brought as near as three inches. The shoulder and face were protected by a lead mask. The first seance was ten minutes, but the time was increased to twenty, and later, thirty minutes. A few applications were made on alternate days, and after that were given daily. Occasionally the reaction was uncomfortably severe, and the treatment had to be suspended for a few days. At no time was there anything approaching a burn, nor was there any serious discomfort.

No black spots appeared after the first exposure, and after the third there was apparent improvement, and the skin had entirely cicatrized in two weeks. The infiltration gradually faded away. The last place to be affected was just behind the angle of the jaw. It occurred to me that the bone might be protecting it. The position was so changed as to allow the rays to come from behind, after which the place soon softened and disappeared.

By the last of July there was no evidence of the disease except the cicatrix. The applications were made once a week for another month and now we have him report once a month. The growth never occasioned severe pain, but there was a drawing, uncomfortable feeling. This disappeared as soon as the treatment was begun, but would always return if it were suspended for a few days.

There was another interesting feature worthy of mention. In adjusting the lead mask, he often steadied it with his hand, so that two fingers were exposed to the ray. They became very red and shed their nails. This shows that the nutrition of the tissues is profoundly affected by it. The

fingers, since guarded from exposure, are regaining their normal condition.

The tumor removed at the operation was hardened and examined by Dr. William R. Davidson, who made the diagnosis of alveolar melanotic sarcoma. A specimen was also sent to Dr. B. F. Cline of the Post-Graduate Medical School of New York, who confirmed the diagnosis.—*Journal A. M. M.*

A CASE OF CARCINOMA.

Reported by May Cushman Rice, M. D., Chicago, Ill.

Mrs. E., aged 54. Referred by Dr. Cornelia deBey.

She had profuse hemorrhage in May, 1901, and in September was examined by Dr. deBey and referred to Dr. Shears with a view to surgery.

The latter found a carcinoma extending from the neck of the uterus into the walls of the bladder and rectum. He recommended curettement and cauterization, but otherwise pronounced the case inoperable.

After this slight operation, the last of October, she began X-ray treatment with Dr. Emil Grubbe. Exposures were made through the abdomen with a high vacuum tube excited by a coil. She gained in weight and felt better, but the discharge remained about the same. The middle of December she had severe hemorrhages. In January she began having more pain and hemorrhages every two or three weeks, and somewhat discouraged gave up treatment the last of March. At this time she was having fever, pain, night sweats and loss of strength

and flesh, accompanied by a good deal of sloughing off of tissue. No doubt the tax upon her strength in order to make the trip to and from Dr. Grubbe's office was largely responsible for the fact that there was no greater improvement.

On account of attacks of severe pain, lasting two or three hours, and a very profuse and offensive discharge, the patient was referred to me July 29 for X-ray treatment with only a slight hope that it might alleviate the symptoms.

Examination revealed a solid mass in the vagina with a much excavated cervix. None of the organs could be outlined. Even with a most careful examination there was considerable bleeding.

Exposures were made daily through a Ferguson glass speculum of small size, as there was only a slight amount of room for the introduction of the same. A tube of medium vacuum was excited by the static machine. A shield of lead foil protected all parts around the speculum. In spite of the small area exposed to the ray through the very small speculum, the pain was much relieved after the second treatment, and there was a steady decrease in the amount of discharge and odor. Treatments were given daily except Sunday until Aug. 22. From this time on the ray was applied on alternate days through the abdomen and speculum. As the patient had shown slight signs of dermatitis during the previous five months, and as there was such extensive invasion, it seemed best to remove the shields and give the ray as wide a range as possible. From Aug. 29 to Sept. 20 seventeen treatments were given without any shield. Following this a dermatitis developed over both the abdomen and buttocks, whereupon treatment was discontinued. At the end of a week the dermatitis had disappeared apparently and the patient was thinking of returning for treatment, when the dermatitis suddenly became more marked. There were large blisters over the abdomen and also on the buttocks. This was Sept. 29. The burns were not entirely healed until Oct. 28.

Oct. 31, five weeks after the last treatment had been given, a high temperature developed with profound general depression. Temperature remained 104 and 105 for several days. Severe chills followed. The offensive discharge, which had gradually disappeared since the beginning of treatment, remained almost absent up to this time. It now became very profuse.

Coincident with this discharge the temperature fell to normal and has continued nearly so up to the present time, Feb. 6. The patient has gradually regained her strength, until now she is able to be about the house. She has scarcely any discharge and no odor, and she has had no hemorrhage since the beginning of treatment six months ago. These conditions show that the malignant process has been checked. The result, so far beyond expectation, causes one to wonder what would have been accomplished had the treatment been continued, especially if the removal of the mass, thus lessening the liability to absorption of toxic substances, had preceded the treatment.—*From New Albany Medical Herald.*

ACCIDENTS DUE TO X-RADIANCE.

Current medical literature recounts a number of casualties which have recently occurred in the domain of X-ray therapeusis. The lesion resulting from this agency is peculiar in that sensation is not simultaneous with exposure, that indications of cell metamorphosis may be deferred several hours or even weeks, that recourse to stimulating treatment is unavailing and that the period elapsing between the date of exposure and the degree of reaction is devoid of ratio. The physiologic phenomena involved in the nutritive change is not yet satisfactorily explained.

The scope of these accidents is not confined to burns of the first, second or third degree, as ordinarily understood, but includes a fourth burn which is peculiar to skiagraphers and manifests itself in the form of minute papules on the hands after repeated brief exposures. The number of these elevations is limited in the beginning, but shortly the entire hand

assumes a crimson hue and becomes roughened, the normal markings suffering obliteration. Eventually the skin is markedly thickened, the condition being particularly emphasized in the knuckle folds, while the longitudinal striations of the finger nails are more conspicuous. This variety of burn has been experienced by Groover, who testifies to its extreme chronicity, skillful endeavor having failed to effect tissue resolution.

Alopecia in a child three years old, who had been treated for tinea tonsurans of the microsporon variety, is recorded in the practice of Whitfield. Two patches of the disease had existed for many months, one of which was subjected to fourteen exposures as an experimental measure. The ringworm disappeared, but the site of its occupancy sustained depilation of every healthy and diseased hair within a week after cessation of treatment. Before a month had elapsed, and while the other patch was being treated, return of hair was noticeable in the bald spot. The second patch had received ten exposures at this time, and although no loss of hair resulted, slight redness of the scalp indicated early shedding unless the seances were modified. The fact that instances of permanent baldness are reported forcibly illustrates the necessity of experience before electing this measure generally.

The premature demise of an English physician from malignant disease is alleged to be traceable to an X-ray accident. Blacker suffered a severe burn on one of his fingers while manipulating the apparatus. This irritation produced an unyielding dermatitis, which rapidly ascended the arm. Cancerous disease of the skin now appeared at the elbow, and evidences of malignancy were soon perceptible in the axilla, the disease finally involving the entire shoulder, the progressive character of which precluded operation.

Grubbe, who has treated several hundred patients for cancer and other malignant growths, recommends that the burning stage of the area exposed for treatment be retarded by the application of vaseline, and that surrounding tissue be protected from the caloric rays by a lead foil shield. This operator states that the vacuum of an ordinary X-ray tube is unreliable because of constant changing, and that only tubes whose vacuum allows of perfect control should be employed. The precaution of adjusting tube and shield before the current is turned on is

emphasized by Brown, who advises that when the fluoroscope is used the palm be directed toward the tube and the operator stand at a distance of several feet. A special glove lined with tin foil is worn by Beck.

George details some experience with radiotherapy in another department of this journal. Several cases are mentioned by this writer in which X-ray dermatitis was a factor, and reference is likewise made to a case in the practice of Rubel, wherein death occurred from the effects of an extensive burn of the abdomen. The appearance of a dermatitis is claimed by the author to be not only "an actual interference with the process of healing," but is also liable to render early death a certainty by extension of malignant growth and absorption of toxic products.

These few instances, even, should serve as admonitions to exercise the utmost caution when utilizing the X-ray machine as a therapeutic agent.—*The Physician and Surgeon.*

A THERAPEUTIC SUGGESTION.

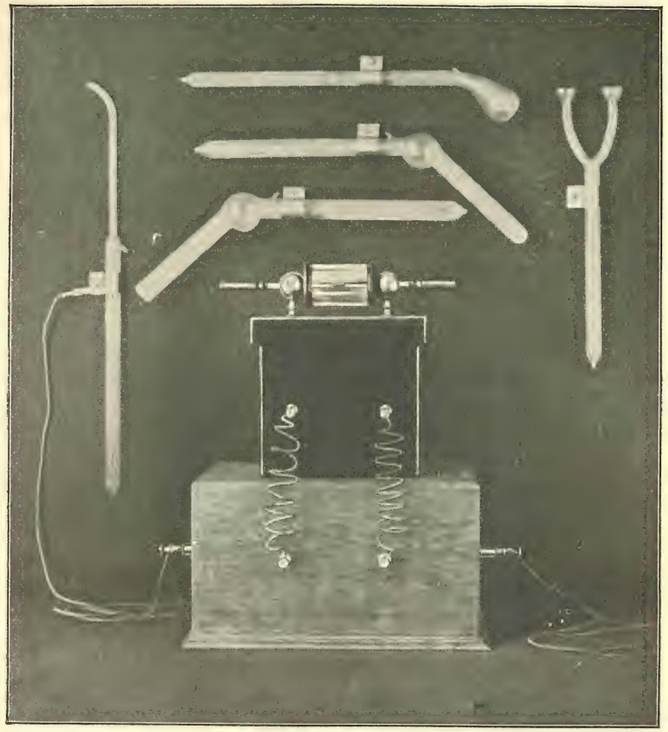
In the St. Louis Courier of Medicine H. N. Chapman, M. D., suggests that all cases of mammary cancer should be first submitted to the X-ray before operation, not for the purpose of destroying the cancer in the gland, but in order that any metastases in the axillary glands may be first broken down and destroyed. The cancerous mass in the breast should then be thoroughly removed with the knife, while the axillary glands may be preserved intact as a defensive barrier against the spread of the disease. After the wound is healed the X-ray treatment should be resumed for a considerable time.

He bases this suggestion on his observation of four cases in which the breast and axillary glands were removed with a fatal termination. He considers that the method of operation first followed by X-ray treatment has been proved an inadequate method.

BOOK REVIEW.

"The Practical Application of the Roentgen Rays in Therapeutics and Diagnosis," by William Allen Pusey, M. D., and Eugene William Caldwell, B. S. Published by W. B. Saunders and Company.

Among the recent books treating of this most interesting department of the medical sciences this treatise is to our mind the most valuable from the standpoint of the experienced scientist. The subject is handled in a masterly way, both in the description of the apparatus and the principles involved, as well as in the therapeutic effects of the X-ray on normal and diseased tissue. Very complete details of the method of taking a radiograph of the different parts of the body are given, which will be of great value to the operator who has not obtained satisfactory results. Fully as much can be said concerning the explanation of the method of treating the different diseases in which the X-ray has been applied. Dr. Pusey has had a wide experience in the use of the agent. He has taken the pains to have many of his cases photographed, which show that many of the patients were in a desperate condition at the beginning of the treatment. Dr. Pusey's investigation concerning the effect of the X-ray on normal and abnormal tissues is of great scientific value. The book will certainly be a standard in this science.



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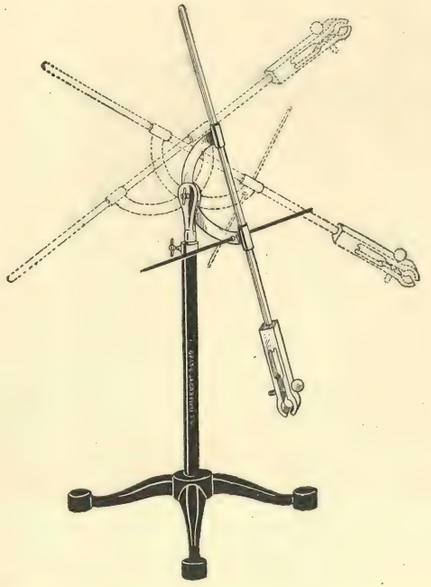

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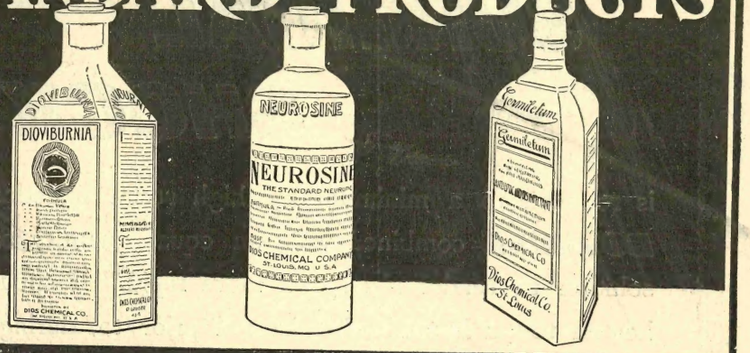

DIOVIBURNIA
THE STANDARD
UTERINE TONIC AND ANTISPASMODIC. UNEXCELLED IN DYSMENORRHOEA

NEUROSINE
THE STANDARD
NEUROTIC. HYPNOTIC. AND ANODYNE. CONTAINS NO OPIUM. MORPHINE OR CHLORAL.

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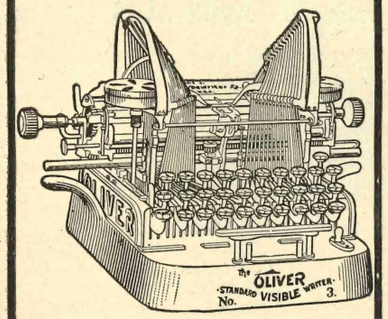

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