FISCHER'S

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VOL. 4

1925

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Program for Our

Monthly Physiotherapeutic Meeting

Monday, June 8th, 1925

R. F. ELMER, M. D., Chicago, Illinois
"Tonsils"—Clinic - - - - - - - - - - - 10:00 to 11:00 A. M.

W. B. CHAPMAN, M. D., Carthage, Missouri
"Diathermy in Gynecology" - - - - - - - 11:00 to 12:00 A. M.

W. B. CHAPMAN, M. D., Carthage, Missouri
"Electro-surgical Removal of Neoplasms" - - 1:30 to 3:30 P. M.

How to Get Here:

DRIVING—Follow Washington Blvd. west to Oakley Blvd., north on Oakley to Wabansia Ave. and one block west, or

BY ELEVATED — Take the Humboldt Park "L" to Western Avenue Station, walk one block north to Wabansia Avenue and a short block east to Claremont, or

BY SURFACE CAR—Western Avenue to Wabansia Avenue, and one block east to Claremont.

Dr. Elmer has already performed over 400 tonsillectomies by the electro-coagulation process, and will demonstrate his actual technic on patients who have been secured for the occasion.

Dr. Chapman has been doing a great deal of G. U. work with both medical and surgical diathermy, and has a number of original and very interesting slides to introduce along with his two appearances on this program. This feature should prove very interesting, and we are making ample preparations for an overflow crowd. A hall has been arranged for, which will insure a seat to every physician attending.

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FISCHER'S MAGAZINE

JUNE, 1925

Determination

THE WORLD MAKES WAY FOR A RESOLUTE SOUL, OBSTACLES GET OUT OF THE PATH OF A DETERMINED MAN WHO BELIEVES IN HIMSELF.

THERE IS NO PHILOSOPHY BY WHICH A MAN CAN DO A THING WHEN HE THINKS HE CAN'T.

Fischer's Magazine

Devoted to the advancement of the Science of Electro-Physio-Therapy and to the interests of those earnest and enlightened medical men who are practicing it.

Vol. IV. JUNE, 1925 No. 6

Standardizing Electrotherapy Apparatus

Dr. Frank B. Granger of Boston, President of the American Academy of Physiotherapy, in his address before that body at the recent gathering in Atlantic City, said:

"In the electrotherapeutic branch much remains to be done along lines of standardization of apparatus and treatment. A committee composed of physicians, electrical engineers and manufacturers, aided by the United States Bureau of Standards, should standardize all electrical apparatus. Instead of the chaos at present existing in high frequency it should be possible to prescribe certain wave lengths vibrating at certain rates of oscillations. It should be possible to determine within what limits their therapeutic values lie. At present certain results can be obtained on one make of apparatus which either cannot be duplicated on another, or can be obtained only with difficulty.

"If we could give an electrical prescription, and had machines which like the wireless we could tune to such a prescription, the clinical results certainly should be more uniform, and a standardized technic could be worked out. Such measures as these should be the aim of this new association, and upon it depends the future of scientific physiotherapy."

The publishers of Fischer's Magazine are heartily in accord with Dr. Granger on this point. May the day soon come when all electrical apparatus used in medicine and surgery is so standardized as to simplify the problem of the physician and the surgeon in prescribing and administering electrical treatments.

Galvanism in Atresia

By J. U. GIESY, M.D.
Salt Lake City, Utah

Atresia of the cervix is one of the conditions the practitioner of medicine is always meeting and one of the most painful and troublesome things to overcome in the younger element of his female patients. A surprisingly large number of adolescent women suffer from some developmental affection of the uterus itself, ranging all the way from the purely infantile type to the norm.

Here is the cause of so many of our dysmenorrhoea cases—a condition which frequently makes menstruation a nightmare to be dreaded by the victim from month to month. Yet the means of relief is practical and simple in the hands of any man supplied with a galvanic equipment such as at the present day is easily at command.

Briefly review what I have said in previous papers published in Fischer's Magazine about this current—its unidirectional quality, its constant polarity. Then recall the character of the two poles, especially the negative, since exactly as in urethral stricture in the male, it is the negative pole which we are going to use on the case in hand.

The negative pole softens tissues, dilates blood vessels increases blood supply, destroys tissue by electrolysis, ionizes acids and halogens.

Assuming that we have a virgin uterus with an abnormally tight external or internal os or both, or even in an atresic condition in its entire extent. How shall we proceed? We have a choice between mechanical dilatation which is temporary at best, surgical dilatation, with the insertion of a tube until healing has occurred, or the method I am about to describe.

Place the patient upon her back on a table equipped so as to hold the feet, legs and thighs well apart and back. With a speculum suitable to the size of the vaginal canal, which in these

cases is apt to be rather small, carefully and gently expose the cervix and inspect the external os. Select a small sound of copper or zinc suitable to engage in the os, and attach it to the negative pole of the instrument furnishing the current, and place the positive or, in this case indifferent, electrode on the abdomen or lumbar region as preferred. With this instrument gently inserted, turn on from five to seven milliamperes of current, and watch. If everything is going well a slight whitish froth will gradually form about the pole in the average case. Gradually and very gently advance the sound, using no undue pressure. If it penetrates the internal os at the first treatment well and good. If it does not, repeat at subsequent treatments and persist until it does. Use mild currents and treat the patient gently, overcoming her fears and winning her confidence. As treatment advances use a larger sound until the desired size is reached. In case there is an infantile or a partially infantile condition of the uterine body in connection with the condition of the cervix, we vary the technic. Having dilated the cervical canal to the desired extent, we next endeavor to stimulate uterine development. Using one pole intrauterine, we employ a sine wave current, using the slow wave. This current stimulates muscle development and also absorption of products partially broken down by the initial galvanic electrolysis. This is Neiswanger's method and one I have personally used for years. Carried out as outlined, with first dilatation of the cervix, with slow increase of the sound scale, followed by the muscle stimulating sine, the results are all that could be asked.

Recently after treating such a patient and upon her return after a menstrual period had interrupted the later stages of the treatment, I asked her how menstruation had been and she replied: "Delightful." I'm hoping she told the truth, and I believe she was, since to one who has suffered as these girls and women do suffer at each cyclic recurrence, to pass through the customary ordeal in comparative comfort, must be delightful indeed. And the beauty of it is, it's all so simple. All one needs is surgical cleanliness, the proper equipment, and a little tactful gentleness to bring about such results.

Artificial Sunlight in Infantile Paralysis

By G. MURRAY LEVICK

May I mention in your columns the result of recent researches into the treatment of infantile paralysis in which I have used general radiation of the body by artificial sunlight, and local treatment of the affected muscles by red rays?

The observations which led to my using general radiation by artificial sunlight were as follows. In 1920 I began the study of artificial sunlight treatment at St. Thomas's Hospital. I chose as one of my groups of cases children suffering from rickets. This work I did in cooperation with Dr. R. C. Jewesbury. We found that about a month's treatment with artificial sunlight was enough to secure a virtually normal X ray picture of bones which had shown at the beginning of treatment a marked deficiency in calcification. I found at the beginning of their treatment these children were fretful. They did not like to be touched; they cried at the least thing; did not like having their clothes put on; slept badly; did not put on weight and, in short, appeared to me to be suffering from symptoms of acute neurasthenia. These symptoms were the first to clear up under the light treatment. They were rapidly transformed into happy, contented and easily managed children. This change was the first to appear; it came even more quickly than the bony recovery, and it appeared to me that the change was due to the rapid improvement of nutrition in the nerve centres under the action of light. I followed up the broad hint furnished by this observation by treating a series of children suffering from infantile paralysis at the Heritage Craft Schools, Chailey, with artificial radiation obtained from a mercury-vapour lamp used in conjunction with a group of lamps consisting of carbon filament in vacuo with a suitable reflector.

With regard to local treatment of the muscle by red rays, at Leysin Dr. Augustus Rollier showed me the wonderful improvement in muscular development that took place under the sun's rays, and he told me he thought this must be due to the action of the red or infra-red rays. The infra-red rays are absorbed and diffused by water, consequently the water in the tissues prevents the heat rays from penetrating them deeply. The red, on the other hand, are not interrupted by water, and it is easy to see how they penetrate the tissues by merely holding the hand in the path of a sunbeam entering a shady room when the red rays can be seen to penetrate the fingers easily. In order to secure the intense radiation of the paralysed limbs with red rays, I passed the rays from the carbon filament lamps through red screens, so screening off much of the heat without cutting down the red rays. I could thus use a red light of much greater intensity than is possible without the red screen. This treatment was used in addition to the ordinary electrical treatment.

The results obtained were far in advance of anything I have seen in the course of a long experience in the treatment of such cases. They show a recovery of faradic and voluntary response in muscles that were so much atrophied as to give no electrical response at the beginning of the treatment, and in some cases the initial attack had taken place many years before the treatment began.

(*From The Lancet, March 28, 1925.*)

Annual Meeting of I. H. S.

The annual meeting of the Illinois Homeopathic Society was held at the Auditorium Hotel, Chicago, May 4 to 7 inclusive. A most satisfactory and instructive meeting is reported by physicians who attended.

It is interesting to note, in connection with the nation-wide development of physiotherapy, that one entire day out of the four was devoted to this branch of medical science. This is the first time, so far as we know, that this Society has allotted a substantial place on its program to physiotherapy, and the event may well be significant of the rapidly growing interest in the physical modalities.

Electro-Surgical Removal of Piles

By W. B. CHAPMAN, M. D.
Carthage, Mo.

Hemorrhoids or piles may be classified according to their location, appearance, cause, character, or the symptoms that they produce. To the surgeon, however, the only question of importance is their safe and effective removal.

During the past three years I have performed quite a number of hemorrhoidal operations by surgical diathermy or electro-coagulation, and the success that has been attained convinces me that in the majority of cases this is the operation of choice.

The technic is simple and is as follows:

Cleanse the field and paint over with Tincture of Iodine. If the hemorrhoid is inside the rectum, it may be exposed in a woman by inserting a finger inside the vagina and exerting

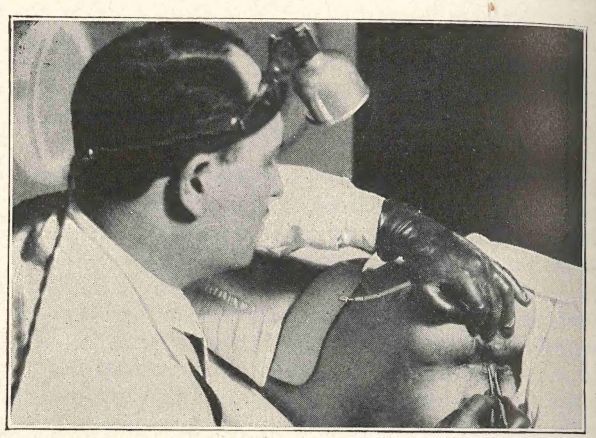


Fig. 1.

pressure on the rectum. If a man, the cup and suction apparatus of the high frequency machine is quite effective. When the pile is exposed, grasp it with the thumb forceps (Fig. 1) and, using a 2 per cent novocain-adrenalin solution, inject a few drops underneath the tumor (Fig. 2). The thumb forceps should be rubber-tipped to prevent pinching. I usually cut short lengths from an old rubber catheter and slip over the ends of an ordinary tissue forceps.

For the operating instrument a sharpened Plank needle is very good. Any kind of a needle will do, but I employ the short pointed electrode that comes with the Diathermy operating set. This becomes the active electrode of the D'Arsonval circuit while for the indifferent electrode I employ a large piece of block-tin which is warmed and held in place by sand bags. No soap lather is required for contact and it makes little difference where it is applied. It is also possible to use the autocondensation pad or handle as the indifferent electrode, but requires much more current and the results are not so uniformly satisfactory.

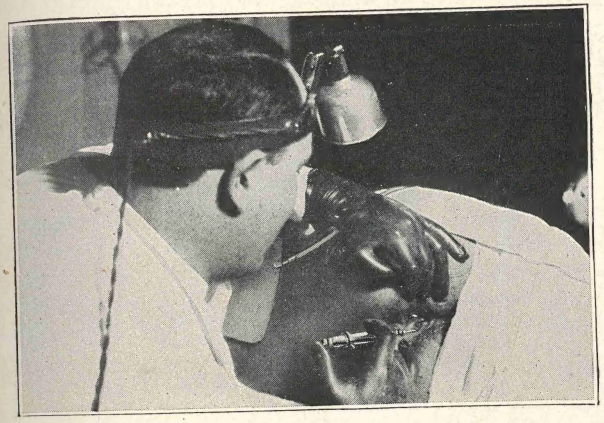


Fig. 2.

Using a high frequency machine at the lowest tension, set the controls so that the meter will read about two thousand milli-amperes when the two electrodes are brought into contact with each other. With the current adjusted, the tumor anesthetized, and the indifferent electrode in place, insert the point of the operating needle into the pile and, using the foot-switch, apply the current until the pile turns a steel-grayish color (Fig. 3). This only requires a few seconds. The injection solution inside the pile becomes boiling hot and by scalding destroys the endothelial lining of the dilated blood-vessel causing a coagulation and consequent disappearance of the tumor by absorption.

Hemorrhoidal tabs or "sentinel piles" are largely fibrous tissue and should be coagulated until white. They separate after about ten days and the base heals over with a soft, pliable scar. After coagulation, the hemorrhoids will protrude from the rectum and should be bathed twice daily or oftener with hot boric or cresol solution. This limits the swelling, prevents infection, and relieves pain and soreness. If there is much after-pain prescribe a suppository of cocoa-butter containing one grain of opium and from ½ to 2 grains of belladonna. These suppositories are on the market and can be secured from any

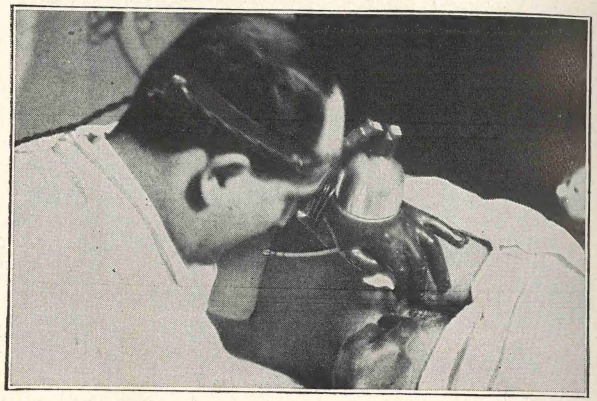


Fig. 3.

druggist on prescription. Instruct the patient to insert one suppository into the rectum on retiring, and they may be used as often as is required to ease pain. An ointment containing morphine sulphate gr. 5, tannic acid gr. 10, in one ounce of zinc oxide is also useful.

By the above procedure it is possible to treat successfully any case of piles and the patient may proceed about his daily work. It is best to coagulate only one tumor each time, the patient returning for another treatment, as soon as the soreness from the last is gone. The unfortunate thing about the treatment of hemorrhoids by surgical diathermy is that, especially, inexperienced operators, will overtreat and produce so much tissue destruction at one time that the patient is completely incapacitated for several days. Three or four treatments usually suffice to clean up even severe cases, as the coagulation of one tumor often impairs the blood supply to several other hemorrhoids, causing them to disappear also. I have in mind a case where one treatment cured a case of hemorrhoids that was so bad that the man was incapacitated from earning a livelihood and was confined to his bed a large portion of the time. Another thing, with this operation, there is not the danger of hemorrhage, embolism, or infection that attends the old operative procedures, and the end-results are more satisfactory.

(Reprinted from Fischer's Magazine, February, 1925, pp. 28-29)

Surgical Diathermy in Accessible Malignancies

By J. U. GIESY, M. D.
Salt Lake City, Utah

Few subjects involving the interest of the medical profession today outrank that of malignancies. The increasing incidence of this condition, linked with the still baffling obscurity of actual cause, make of it a type of human affliction against which every man of the profession must continually be on guard, as well as constantly ready to attack at the first indication that it exists.

The time honored knife, radiotherapy and the use of radium, today accepted as standard methods, singly or combined, may well now be reinforced in the warfare against cancer, by a fourth means rapidly coming to the front, not only as a successful method but frequently as one of choice.

I refer to *Surgical Diathermy*—a principle of electrical tissue dehydration and destruction, long known, but not, until recently, extensively employed.

Experience has proved that the heat generated is a definite thing, capable of definite and consistent production, and that by this method the actual local heat of the tissues can be raised from a medical temperature consistent with advantageous changes in the metabolic processes, to an actual tissue destruction point, depending upon the operator's wish.

One of the details of such treatments, which must never be forgotten, is the fact that the current can be focused, and the region of greatest heat development determined within clinical limits, by the method of its application. Briefly, the rule governing this "focusing" of heat intensity is this: "The greatest degree of heat will be nearest the smallest electrode."

Surgical Diathermy is based upon and takes advantage of this established fact. In this type of Diathermy the heat developed is focused to a degree which makes it resemble nothing so much as a very small and intensely hot point. In this it is not unlike the focusing of light rays by the so-called "burning glass," and it is at this focal point that tissue destruction occurs. Picture in your mind's eye a cone shaped zone of electrical force. The indifferent electrode, applied to any convenient part of the body, is the "base" of the cone. From it the lines of force converge as from a base to the point of the cone, which is the destructive area, located at the point of contact with the active electrode placed in or on the tissue to be destroyed.

At this point there is generated a heat intense enough to bring about actual cell destruction. This heat is generated *in the tissues themselves,* by the focusing of the current against the surface of the electrode employed. In this respect Surgical Diathermy differs from Fulguration, in which a spark is directed against the tissues from without, rather than from within, using the patient's body as a ground. This can well be proved by noting that in Surgical Diathermy the active electrode remains cool; and this applies, whatever method of Surgical Diathermy is used.

Under one method, the patient is connected with the indifferent electrode, and the active electrode, connected with the machine, is brought into contact with the tissues to produce the desired effect. In a second method, applicable to small neoplasms chiefly, the patient is connected in the same way, but the active electrode is held in the hand of the operator, who acts as a "ground" for the current and the destructive spark is actually drawn out of the patient's tissues as contact is made.

In either method the result is obtained because of the fact that the body of the patient, being a more or less poor conductor, offers sufficient resistance to the passage of the current to raise the temperature of the tissues at the point of application of the active electrode to a degree where actual cell destruction occurs.

The patient, placed on a suitable (non-conducting) table, and made as comfortable as may be, is prepared for operation by, first, the induction of a field of local anesthesia. Procaine, novocaine and adrenalin, or in small growths apothesin, may be used. The anesthesia having been induced, the electrodes are placed; the large indifferent electrode on any convenient part of the body, as on the back or abdomen, or if desired, held in

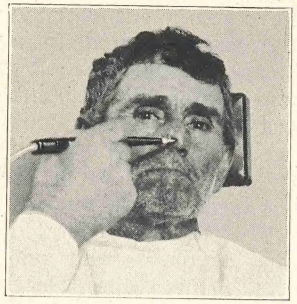


Fig. 1. Treatment of Accessible Malignancy with straight-handle electrode.

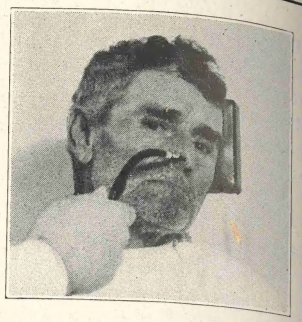


Fig. 2. Treatment of Accessible Malignancy with curved-handle electrode.

the form of a hand grip or metal handle in the patient's hands. The growth is now attacked; contact is made and the current turned on. See Figs. 1 and 2.

In Medical Diathermy the milliammeter attached to the machine is of great service, but in Surgical Diathermy, tissue change under the operator's eye is the best index of results.

Sufficient current should be used long enough to blanch the entire mass of the growth, as well as some of the surrounding healthy tissues, to a dirty gray color. This is the result to be desired. The tissues should be coagulated, dehydrated, but *not charred*. As this blanching occurs the active point or electrode is pushed slowly forward into the tissues until destruction to the desired depth has resulted. The point is then withdrawn and an adjacent area treated in like manner until the entire involved area has been covered.

If the amount of tissue destroyed is small, it may frequently be wiped or picked off and no further attention is required. If the destroyed area is larger, the growth frequently may be trimmed away, taking care to avoid bleeding, and the wound covered with a moist surgical dressing to encourage a more rapid separation of any remaining slough and to prevent infection.

So treated, within a few days the dehydrated tissues begin to loosen. Beneath, live tissues show actively red, and vigorous

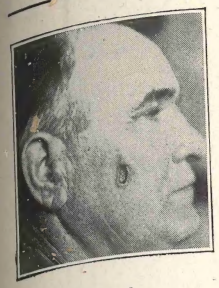


Fig. 3.

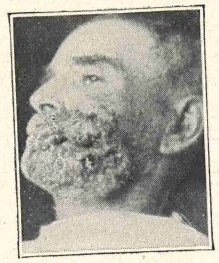


Fig. 4.

Fig. 5.

Typical cases of Accessible Malignancies. Fig. 3 shows small Rodent Ulcer. Fig. 4, large Cauliflower Epithelioma. Fig. 5, Carcinoma of the nose. All successfully treated by means of Surgical Diathermy.

granulations spring up. The end result is a rapid healing over with a flexible scar.

In large wounds, however, healing may be accelerated still more and the end result improved by a few applications of the ultra-violet ray after the slough has come off. Or the ultra-violet and the deep heat from a therapeutic lamp may be combined for a joint effect, of both the cell stimulating quality of the quartz lamp, and the increased blood determination, which the therapeutic lamp will produce.

This is a brief description of the technique employed in Surgical Diathermy and of the end results we may expect—results, by the way, which have been proved time after time in recent years to be the equal in every way, and the superior in so far as pain and scarring are concerned, of any other method of attack on malignant conditions as yet employed.

Let us now consider briefly the nature of the malignancies which may be so attacked. This paper is headed "Accessible Malignancies." And I want to point out here and now, that Surgical Diathermy is a method which makes more accessible many conditions, such as neoplasms of the nares, the naso-pharynx, urological conditions. It is particularly of advantage in work about the eyelids and the inner canthus, where the minimum of tissue destruction with the maximum of efficiency is a prerequisite.

Let us then list the conditions which may be treated to advantage with Surgical Diathermy, thus:

1. SMALL NEOPLASMS of the body, the extremities, the head and face, the eyelids, nose, mouth, nares, naso-pharynx and throat. These can be removed, rapidly, with little scarring —far less than by surgical measures—with slight pain, and very little after attention in the majority of instances. See Fig. 3.

2. LARGER OPERABLE MALIGNANCIES, in which the surgeon has a choice between this method and the knife, particularly in lesions of the tongue. See Figs. 4 and 5.

3. INOPERABLE LESIONS, so-called because of inaccessibility of location or the extent or vascularity of the area involved. Kolischer makes a plea for Diathermy in lesions of this type, citing instances in which in extensive involvement of the cervix, bladder and adjoining zones he has repeatedly attacked the central or necrotic zone of the malignancy with a following recession of the wider arcs, surrounding the central part destroyed. This naturally raises the question of tissue reaction, which is today a moot question. Yet it is a known fact that under radiotherapy and radium, the same thing frequently occurs, giving some ground for the contention of those who belive that malignancy is but the result of cellular metabolic imbalance rather than anything else. Be the cause what it may, Kolischer asserts that following Surgical Diathermic attack on such conditions, the above mentioned results occur.

In so-called inaccessibility, then, the accessibility is increased, the needle point applicator or even a copper wire loop enabling one to work in restricted space. In extensive areas a recession is apt to follow, as much as after radiotherapy or radium. In vascular tissues there is little bleeding up to vessels of 60 mm. caliber, since by the action of the current the vessels are sealed as the operation advances. If large vessels are involved, however, patients should, of course, be hospitalized and watched for secondary hemorrhages.

Now, let us look again for a moment at some of the advantages of this method of attacking malignant growths, summarize as it were the fact already brought out. And these following facts let us especially emphasize:

The current is under instant control. It can be regulated in degree to any extent. It can be made to destroy just what it is desired to destroy, confining mutilation to the smallest possible area.

Bleeding and lymphatic absorption are controlled. The vessels of both systems are sealed by the current in operation. In the attack, the point of first assault is about or around the neoplasm to be destroyed. Having so coagulated a defensive zone against accidental migrant cells, we destroy the central mass.

There is little pain, either during the operation or afterwards.

The scar is small as compared to the work done, is flexible, and in extensive work, should the need arise, the aid of plastic surgery can be invoked on a healthy base.

Here, then, is a measure it will pay every man engaged in the practice of the healing art to investigate; a means of attack upon malignancy which renders the inaccessible more accessible to treatment and which can be aplied to any accessible malignancy of practically any known type, save only in those instances where expediency would indicate the knife. It can be applied with ease, with a minimum of pain and scarring, and with a confident expectation of an excellent end result.

Teaching of Physiotherapy

Dr. W. H. MacCRACKEN, Detroit

There is great need for teaching medical students physiotherapeutics, its principles, application, value and limitations. This can be done best by the department of pharmacology and therapeutics. Associated with this teaching should be a series of experiments and demonstrations to show the physiologic phenomena that may be expected to accompany or follow the application of the particular physical therapeutic agent under consideration. These experiments would deal with temperature variations, changes in blood pressure, pulse rate and character, excretory activity, modifications of hydrogen ion content of the blood, and various other phenomena. Patients from ambulatory clinics are used to study methods of application and results of treatment.

(Extracted from Jour. A. M. A.)

Diathermy in Gynecology—Case Reports

By DON CABOT McCOWAN, M. D.
Chicago, Ill.

Dr. McCowan has kindly supplied these case reports, together with his Techniques A and B, which we feel sure will be of interest and value to readers of Fischer's Magazine.

Case Reports

Mrs. H., age 40, mother of 4 children. Fleshy, neurotic type of woman. Had profuse white muco-purelent discharge for six years from womb. Technique A was applied three times per week for one month. Results, normal conditions established which have lasted five years.

Miss F., age 19, single, morals doubtful. Profuse discharge from uterus, excoriated cervix and skin on outside almost raw. Microscope revealed Specific Neisserian. Technique A was applied three times, once every other day. Results, complete recovery.

Mrs. W., age 30, married, no children, but several miscarriages. Deep ulcerated condition of entire end of servix. Not much discharge. Technique A applied six times, three times per week. Results, complete recovery.

Mrs. J., age 32, widow, one child. Pyosalpinx left tube, complicated by endometritis, endocervicitis and ulcerated cervix. Technique B was aplied for three months. Results, complete recovery.

Mrs. S., age 26, married, had miscarriage about four months previous and suffered ever since with severe pain in lower abdomen which was worse at menstrual periods. On examination, could not palpate tubes on account of tenderness but found profuse discharge from uterus which was not specific. Cervix excoriated, very red and tender. Diagnois of salpyngitis, endometritis and endocervicitis was made. Technique B was applied for four months. Results, complete recovery. Now pregnant.

Technique "A"

Endometritis and Endocervicitis Treatment

1st. Galvanism
(a) Large negative electrode on lower abdomen.
(b) Special copper positive electrode introduced into the uterus, going over entire inner surface of uterus with special attention to cervix.
(c) Using 30 V. and 60 milliamperes of current about 5 to 8 minutes.
2nd. Diathermy.
(a) Five inch square electrode on lower abdomen.
(b) Copper or zinc electrode, insulated except where it comes into contact with the cervix, about one inch in diameter.
(c) Apply as much heat as patient can stand *comfortably,* 20 minutes.

Technique "B"

Salpyngitis usually complicated by endometritis and endocervicitis.

Treatment
1st Diathermy 20 minutes, as in endometritis.
2nd Galvanism.
(a) Positive electrode on lower abdomen.
(b) Negative electrode, insulated except bulb, which is wrapped with cotton saturated with potassium iodide, introduced through a speculum up against cervix, then speculum withdrawn.
(c) Apply galvanism as strong as can be borne comfortably for 20 minutes.
3rd An occasional treatment as in endometritis.
4th Very important. This treatment is not applicable unless there is good drainage from the tubes and uterus.

Diathermy, Its Application in the Treatment of Gonorrhea

By M. G. SPRINGARN, M.D.
Memphis, Tenn.

The scope of this paper is limited to the treatment of Gonorrhea of the male urethra, prostrate, epididymes and the cervical canal of women, by sedative diathermy.

In explanation of the term sedative diathermy, I will state that it is the production of heat *in the tissues* by a bi-polar current, that is, a current producing heat between two electrodes, one positive, the other negative. Technically this current is termed the D'Arsonval current. If in the application of this current, sparks of electricity jumping from the negative pole to the tissues or from the tissues to the positive pole are produced the current then becomes of the stimulative variety or Faradic current and is no longer the current I intend to deal with in the production of heat for the treatment of Gonococcal conditions. I will not go into the history of diathermy. This can be obtained by reading the article by Corbus and O'Conor in the January 1924 issue of Surgery, Gynecology and Obstretrics; but will state that it is a high frequency current of high amperage and low voltage. An ampere is defined as the unit of electrical current, a volt as the unit of electromotive force.

Sedative diathermy produces an active hyperemia, its maximum point of heat intensity being easily controlled, this depending upon the relative size of the negative and the positive electrode and the thickness of the tissues through which the current passes.

The current travels in a straight line between the electrodes producing heat in an inverse ratio to the size of the electrodes, that is, the larger the negative and the smaller the positive the more intense is the heat at the positive pole. So, it is easily seen that the maximum point of heat intensity can be placed at the area desired and it is upon this basis that sedative diathermy is coming to play such an important part as a therapeutic agent in the treatment of gonococcal infections, although the application of heat in these conditions is nothing new.

It is an established fact that the gonococcus in quickly destroyed at a temperature of 113° F. and that longer exposures at a lesser degree will bring about its disintegration. It is also a fact that this degree of heat can be applied to the urethral and the cervical canals without the slightest tissue destruction. The amount of discomfort varies in different individuals, some can stand as high as 116° F., others complain when the thermometer register 109° F., so the degree of heat administered to any one individual depends upon what that particular individual can stand.

Technic

For the treatment of the male urethra the patient is placed in the lithotomy position upon a cot covered with a rubber sheet; the negative electrode consisting of a german silver mesh 6x8 inches is placed under the sacral region of the patient, a heavy coating of shaving soap lather imposed between the skin and electrode, this is attached by a clip to the negative side of the D'Arsonval current. The positive electrode, consisting of a Corbus cervical thermophore with the hard rubber sheath removed, is lubricated with K. Y. jelly and inserted into the urethra. The current is now turned on gradually until the limit of tolerance is reached, which I have found to be between 109° and 116° F. The thermophore is moved up and down the urethral canal very gently, holding at a given point, the current being adjusted according to toleration. Treatments average 50 minutes duration.

For the cervical treatment the same position is taken. The negative electrode is placed under the sacral region for one half the period of treatment and over the supra-pubic region the other half. A metal speculum is inserted, the cervix cleaned and the thermophore, sheathed in its hard rubber casing, inserted into the cervix for about 1½ inches, making sure no metal of the thermophore touches the speculum. A small rubber looped around the thermophore and thumb screw on speculum holds the instrument in place. Treatments were administered for 1½ hours.

In prostatic treatments, the negative electrode is placed over the supra-pubic region and the prostatic electrode into the rectum and held in place. The treatments were for 50 minutes duration.

In epididymitis the Corbus epididymitis electrode is used and the treatments were for 50 minutes duration.

My series of cases treated alone by diathermy consist of 16. 8 cases of sub-acute anterior gonorrhea, 3 cases of chronic posterior gonorrhea, complicated with chronic prostatitis; 3 cases of acute epididymitis and 2 cases of endocervicitis. Each of the 8 sub-acute cases received three treatments lasting 50 minutes at 7 day intervals. 5 of the 8 cases were gonococci free after the last treatment and are still free after a lapse of about 60 days without any form of treatment. The other 3 still show gonococci on culture. One case stood 116° F. for 30 minutes without discomfort and is among the gonococci free.

The chronic prostatitis cases received the same treatment, two are free, one still shows gonococci on culture.

The three acute epididymitis cases were relieved of pain after the first treatment, one returned to work after the third day, another on the fifth day and the third on the sixth day.

The two endocervical cases received four treatments of 1½ hours each, at six day intervals and both failed to show the gonococci on culture at the present time.

There is always more or less discharge from the urethra after a diathermy treatment, lasting three to four days. This is treated by a hand injection using normal saline or a very mild acriflavine 1 to 10,000 in normal saline. It does not produce any discomfort.

My technic for culturing the gonococcus is as follows:

Culture media is ascitic agar improved, previously warmed to body temperature in incubator. The penis is washed with soap and water, then with alcohol. The prostate is gently massaged (in the prostatic cases) and in the anterior cases the canal is irritated by a 1% silver nitrate the day previous. The urine is collected in a sterile centrifuge tube, centrifulized for 15 minutes, then with a sterile pipette some of the sediment is transferred to the media, which is at body temperature. The tube corked with a sterile rubber stopper is placed standing up in the incubator at 37½° C. After about 18 or 20 hours if the gonococcus is present, a grayish, translucent growth appears, discreet and pin-point in size. This pin-point size does not vary or grow larger as the culture gets older. They may coalesce. The growth is checked for gonococci by Grams differential stain.

Conclusions

At the present time, I have drawn no definite conclusions as to the status of diathermy in the treatment of gonorrhea. My experience has been too limited and I am handicapped because of the fact that I am working upon my private patients and as a rule they are unwilling material for experimentation. Nevertheless, from my meager work I believe we have a remedy that will conquer gonorrhea of the urethra, prostate and cervix in a very short period of treatment, whenever we produce an electrode that will deliver 110° F. to all parts of the entire anatomical tract of the urethra, prostate or cervical canal at the same time.

Relationship of Rickets to Light

A. B. Marfan does not believe it justifiable as yet to conclude that lack of sunshine, and particularly of the ultra-violet rays, is the principal or sole cause of rickets. If this were the case, it would be difficult to account for the fact that rickets is as common in the country as in the cities and in Italy as in Northern countries, and that it is unknown in Greenland, where night is practically continuous for four months in the year and where syphilis and artificial feeding are not observed. Lack of sunlight may, however, be put down as a predisposing cause of rickets. In France, it is not the main cause of rickets. The favorable effect of the ultra-violet rays in rickets is exerted first of all upon general nutrition. After a few exposures the appetite improves, sleep is more restful, the weight increases, and the red cells and hemoglobin show a notable rise. When rather old rickety children unable to walk are treated, they often begin to walk after about ten exposures. Aside from cranio-

tabes, which shows rapid consolidation under these rays, their action on the bony deformities is not very apparent, though upon x-ray observation the mottled aspect of the end of the diaphysis is seen to lessen or disappear, and the wavy, cup-like outline of the end of the diaphysis, which is characteristic of rickets, often undergoes a rather rapid change, becoming straight.

(*Presse Medicale, January 24, 1925.*)

Radiant Energy in the Treatment of Otitis Media

ABRAHAM R. HOLLENDER, M. D., and MAURICE H. COTTLE, M. D., Chicago, Ill.

Treatment of Acute Purulent Otitis Media

When we summarize the customary treatment for acute otitis media, we are limited to rest, catharsis, the application of heat for the relief of pain and surgery. The popular way of applying heat has been either by a hot water bottle or by douching the external ear with a hot sterile solution. When these measures prove inadequate, the physician is forced to resort to an opiate or some coal-tar analgesic.

The application of heat, undoubtedly, is of great service in the relief of pain, but unfortunately neither the hot water bottle nor the hot douche has proved adequate for all purposes.

Our experience has taught us that the greatest success can be attained with the radiant heat lamp, the so-called therapeutic lamp. The radiant energy given off by such a lamp is transformed into caloric energy, which is concentrated over the area and within the region of the ear without the production of burns, even by long exposures.

The use of radiant heat light in otitis media is not altogether new, as several reports have recently been published in the literature. Gerstenberger and Dodge recorded their experiences, which showed that radiant heat light is not only curative by virtue of the penetrating effect of the luminous spectrum into cell structure, but also a valuable prophylactic agent for the same reason.

There are various types of radiant heat lamps on the market. However, the candlepower or wattage is not the same in all of them. We prefer to use a lamp with a 1,500-watt bulb, uncolored, and so arranged that the lamp may be raised or lowered and set at any desired distance from the area to be irradiated. In acute otitis media, the heat rays should be applied at least once, and if possible two or even three times daily, for from 40 minutes to 1 hour at each sitting. If applied more than once, the duration of treatments may be less, gauged ac-

cording to the severity of the symptoms. The relief of pain is prompt, the exudate is absorbed, and in many instances there is complete resolution of the inflammatory changes in the drum membrane.

Even if the patient presents himself at a time when paracentesis of the drum membrane must be performed, the light therapy is the after treatment *par excellence*.

Case Reports

The following cases are of interest because they show the indications for radiant heat and the possibilities with this form of therapy:

Case 1. J. P., female, age 25. Single, accountant. Had a "bad cold in nose" for three weeks, when severe pain in the right ear developed and continued for two days. Pain was relieved when the ear began to discharge, but recurred a few days later. There was severe pain and tenderness to pressure over the mastoid region. Examination revealed a bulging red membrane without normal landmarks. Hearing test, whispered voice at three feet. Paracentesis was performed under local anesthesia in the lower posterior quadrant. The ear was wiped dry and radiant heat light applied, at the first sitting for 30 minutes at 30 inches. For home use warm boric alcohol was prescribed. No drains were used nor hot applications prescribed. For two days severe pain in the antrum region continued, but the appearance of the drum indicated some recession of the infection. Radiant heat light was used daily for one week, with the result that all pain disappeared, the discharge ceased and the appearance of the drum membrane returned to normal. According to the patient, similar symptoms and findings in the left ear three years previous were treated by operation on the mastoid.

Case 2. J. B., male, age 15. Last summer a severe otitis media of the right ear developed after swimming. The drum membrane was bulging and presented every evidence of acute inflammatory changes. Pain was intense, with slight serous discharge exuding from the canal. Five per cent warm phenol glycerine, instilled into the ear, and the hot water bottle did not relieve the condition. On the second day the radiant heat

lamp was applied for 30-minute periods, morning, noon and night. After the first treatment the pain was appreciably lessened. The applications were continued for four days. The drum membrane did not rupture, the bulging receded and the discharge cleared up. The inflamed drum membrane changed its appearance and after one week the entire picture returned to normal. There was some slight impairment of hearing, which improved readily by catheter inflations.

Ultraviolet in Chronic Purulent Otitis Media

The employment of the ultraviolet ray in chronic "running" ears, where no caries was present and where the pathologic conditions in the nose and pharynx had been corrected, has given favorable results. Preceding the lamp applications, we instill into the ear canal an anilin dye such as mercurochrome or alcoholic eosin. A 2 per cent solution of mercurochrome is preferred. After instillation, it is allowed to remain for 10 minutes, when the canal is mopped dry and the Kromayer lamp applied with suitable aural (quartz) applicator for 1 minute at the first treatment. The voltage of the lamp is accurately measured. The duration of treatment is gradually increased up to 3 minutes at the sixth application.

This therapy does not conflict with other measures which one may want to use. If inflations are indicated, these should precede the lamp irradiations. Home treatment, when advisable, consists of instillations of a 2 per cent mercurochrome solution once or twice daily. The local irradiations are usually followed by general body exposures for reasons which will be discussed later. The roentgen ray should be used as a diagnostic check to determine involvement of the mastoid.

Frequently, the results after persistent treatment are discouraging, chiefly because some underlying focus has been overlooked or else the general condition of the patient is such as to offer the poorest kind of resistive elements. It is quite evident that accurate diagnosis is a very important factor in the success of the treatment, for, without proper selection of cases, ultraviolet therapy will occasionally fail to produce the desired results.

Case Reports

Two cases are here briefly reported to illustrate the types treated and the course they assumed:

Case 1. W. B., a girl 9 years of age, had had a "running" ear since she was 5, when scarlet fever had produced an otitis media. The drum at that time had ruptured spontaneously, and the ear kept discharging intermittently, sometimes improving for a short period when some sort of treatment was instituted. Roentgen-ray examination revealed absence of mastoid involvement and caries. There was a fairly large drum membrane perforation and only slight impairment of hearing. The cultures showed a mixed type of infection. The tonsils and adenoids had been removed at the age of 6, with little subsequent improvement. The patient was treated by the method described above. She was given local and general exposures, the latter for the favorable effect on body metabolism. After eight treatments the discharge ceased and there has been no recurrence for nine months.

Case 2. R. E. M., male, age 17, was suffering from a chronic "running" ear for two years following an attack of influenza. Subsequently the tonsils and adenoids were removed. Examination of the nose revealed nothing abnormal Various irrigating formulae were employed and frequently some slight granluations were cauterized with nitrate of silver solution, but in spite of every effort the discharge persisted. This patient was cured in ten treatments, which were given at first every other day and later twice weekly. Inflations were employed preceding the light therapy.

(From Eye, Ear, Nose and Throat Monthly, Feb. 1925)

Germicidal Rays

A study of the germicidal action of ultra-violet rays, covering the range of wave lengths from just beyond the limit of the visible spectrum down to the shortest wave lengths emitted by a mercury vapor arc in a quartz lamp, shows that the shortest waves have the most pronounced and vigorous action, being capable, when sufficiently intense, of producing death with an exposure of only one second. Longer wave lengths required

a greater intensity and acted much more slowly, but a fatal result ensued from waves as long as 365 millionths of a millimetre, which is the approximate length of the shortest waves visible to the human eye. Rays of sufficient intensity can kill bacteria (Bacillus coli communis) with an exposure of less than one second in duration, the requisite minimum intensity being obtained at a distance of six inches from the lamp. When the intensity is very low the effect is greatly retarded, and in some experiments an exposure of from seventy-five to eighty seconds was required. With still lower intensities there was some indication that the bacteria were stimulated instead of being killed. It was also found that the germicidal effect was proportionate to the total exposure, whether given all at once or divided into several short exposures with intervening periods of rest.

(Abstracted from Med. Press and Circ., Mar. 4, 1925.)

Diathermy

"You can scarcely pick up a medical journal nowadays, without finding an article on the treatment of various medical and surgical diseases by diathermy and, if you are becoming as interested in this method of treatment as many physicians are, it would be a good idea for you to write to H. G. Fischer & Co., Chicago, for literature regarding the apparatus which they make for the administration of this exceedingly valuable method of treatment."

(From "Clinical Medicine.")

Plan Now to Attend the October Physiotherapy Meeting!

The most elaborate Physiotherapy Convention ever planned will be held at the Drake Hotel, Chicago, next October. Prominent physicians and surgeons will talk on subjects in which they are recognized authorities. Elaborate clinics and round table discussions will be daily features. It will be a meeting from which the practising physician may take home with him a wonderful fund of sound, up-to-the-minute Electro-Physiotherapeutic information for use in his own practice.

Watch This Magazine for Further Announcements

Treatment of Rectal Fistulae by Radiated Dye

By J. G. WALSH, M. D.
Woodbine, Iowa

Case of rectal fistulae of two years standing treated by radiated Gentian Violet. This case had been treated by injection of bismuth paste and various forms of drug therapy for two years with no benefit. Was referred to surgeon as a last resort. It was at this time that I was consulted to see if there was anything that could be accomplished by physiotherapy to avoid an operation.

Patient was an unmarried school teacher of 22 years. Had usual diseases of childhood. Had no medical history until beginning of fistulae two years before Family history negative. Bacteriological examination of pus revealed staphylococcus and streptococcus. Since pus germs have a particular affinity for Gentian Violet, I had freshly prepared 5% Gentian Violet solution in triple distilled water. This was radiated for ½ hour at 12 inch distance with air cooled lamp. This solution was put into a 10 CC syringe, the nozzle inserted into fistulous tract, syringe pushed up against skin, and the solution injected into tract.

On examination four days later the fistula was closed, the discharge had ceased as also the pain. At the time of this writing, seven weeks after treatment, there has been no reopening of fistulae.

The patient was given general body radiation three times a week in addition, merely as an adjuvant. This is the first time in two years that tract has been closed.

This offers a way to use ultra violet in the treatment of sinuses and fistulae. First find the germ, then the dye for which that particular germ has an affinity, then radiate dye and inject the sinus or fistulae.

Comment by MILES J. BREUER, M. D.

"Dr. Walsh's work is that of a pioneer in a new direction. Pacini and Plank had called attention to the fact that dyes are of assistance in actinotherapy, but rather on the basis of

furnishing optical contact by means of which the light can reach the tissues; they filled cavities and sinuses with the dye solution, and sent the light into the solution. Dr. Walsh's suggestion seems rather to parallel the work that has been to some extent carried out in exposing food materials to actinic light; it has been conclusively demonstrated that milk or cod-liver oil that have been exposed to ultra-violet light contain thereupon an enormously increased quantity of vitamins, especially the C, or anti-rhachitic vitamin.

It would be interesting if it could be accurately demonstrated that actinic light has some chemical effect upon the structure of dyes, increasing their effectiveness as biological reagents. It is quite reasonable to suppose that some such thing happens. The accurate proof will lie in the hands of the biological chemists. We practicing physicians do not need to wait for that; we can work out a technic upon the basis supplied by Dr. Walsh, and if there is any good in it, we can take advantage of it at once."

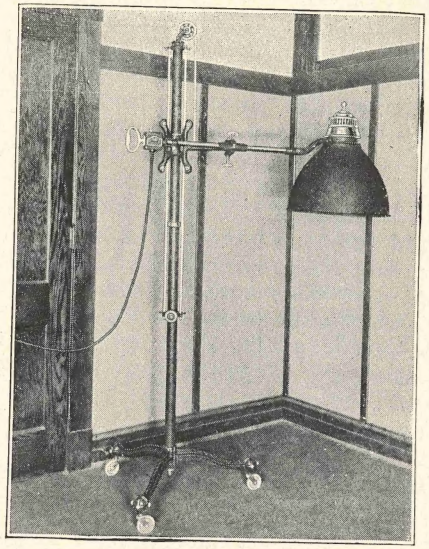
Diathermic Treatment of Acute Anterior Poliomyelitis

By H. PICARD

The theoretical point of departure for diathermic treatment of poliomyelitis is said to be afforded by active hyperaemia in tissues involved in diathermy, in local elevation of temperature obtained, and probably also in the chemico-biological effects of high-frequency alternating currents. Technique, application, and dosage were in each instance determined by localization of the clinically verified focus, extent and possible bilateral character of the latter, age of the patient, and stage of the malady.

The prognosis for restoration of function is declared to be favorably influenced by treatment instituted as early as possible following defervescence. An average period for a single application of fifteen minutes was adopted and gave excellent results. Employment of forms of secondary therapy in addition to diathermic treatment proved highly effective in several cases.

(*Monatsschrift fur Kinderheilkunde, 1924, XXVIII, 242.*)



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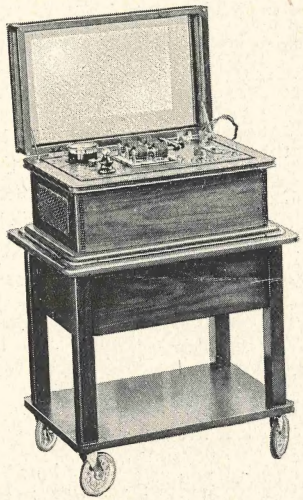

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A PAGE OF FUN

Federal Clerk—"Who was the first President of the United States?"

Citizenship Applicant—"Christopher Columb."

F. C.—"I didn't ask you who discovered America."

C. A.—"Well, I no say Georga da Wash!" □ □ □

Fair One—"Officer, arrest this man! He has been trying to flirt with me."

Mere Man—"What! Her! Why officer, I wouldn't flirt with her for a million dollars."

Fair One—"Now, officer, you simply must arrest this man. He has insulted me."

□ □ □

A Boston school teacher had been explaining to her class about the three kingdoms of nature—the animal, the mineral and the vegetable. When she had finished, she said to the class:

"Now, who can tell me what the highest degree of animal life is?"

At this a little girl in a rear row of seats raised her hand and replied: "The highest degree of animal life is a giraffe."

□ □ □

"Auntie, won't you please wash my face?"

"Why, Robert, can't you do that yourself?"

"Oh yes, I can. But I'll have to wet my hands and they don't need it." □ □ □

The prosecuting attorney was examining a negro witness. "Now, Mose," he said, "tell us what you know about this fight."

"Well, boss," began Mose, "I thinks—"

"I don't want to know what you think. Tell us what you know," shouted the attorney.

"I thinks—" said Mose.

"I told you," shouted the attorney, "not to tell what you think."

"But, boss," said Mose, "I ain't no lawyer; I can't talk without thinking." □ □ □

"So Jobson's pretty stenographer has left him. What was the trouble?"

"She caught him kissing his wife."

Our idea of a "Wet Nurse".

Program for Our

Monthly Physiotherapeutic Meeting

Monday, July 13th, 1925

H. W. BAU, M. D., Chicago, Ill.
"Zinc Ionization in the treatment of chronic Suppurative Otitis Media"..... 10:00 to 11:00 A. M.

J. C. ELSOM, M. D., Madison, Wis.
"Physiotherapy in a State Hospital"..... 11:00 to 12:00 A. M.

J. C. ELSOM, M. D., Madison, Wis.
"Technic in Ultra Violet Therapy"..... 1:30 to 2:30 P. M.

MEL R. WAGGONER, M. D., Cedar Rapids, Iowa.
"Electro-coagulation of Hemorrhoids"—Clinic.. 2:30 to 2:30 P. M.

How to Get Here:

DRIVING—Follow Washington Blvd. west to Oakley Blvd., north on Oakley to Wabansia Ave. and one block west, or

BY ELEVATED—Take the Humboldt Park "L" to Western Avenue Station, walk one block north to Wabansia Avenue and a short block east to Claremont, or

BY SURFACE CAR—Western Avenue to Wabansia Avenue, and one block east to Claremont.

Dr. Bau covers an interesting and important subject in a most thorough and informative manner. Physicians and surgeons will find his description of treatment exceedingly valuable.

Wide experience and a thorough knowledge of physiotherapy as employed in a State Hospital qualify Dr. Elsom to speak authoritatively on his subjects as announced above. Those interested in institutional work are especially urged to take advantage of this meeting.

Dr. Waggoner's success with surgical diathermy in the treatment of hemorrhoids is due, without doubt, in large measure to the perfection of his technic for this type of operation. Do not fail to plan to attend his clinic.

Ample space has been provided so that every visiting M. D. will be assured of a good seat at all the lectures and clinics.

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