

Program for Our Monthly Physiotherapeutic Meeting

Monday, January 11th, 1926

M. H. COTTLE, M. D., Chicago, Ill.

"Physiotherapy as Employed in Eye and Ear
Work"

10:00 to 11:00 A. M.

GUSTAV KOLISCHER, M. D., Chicago, Ill.

"Diathermy in Medical Kidney Diseases"

11:00 to 12:00 A. M.

J. H. HAMMON, Vincennes, Ind.

"General Discussion of Physiotherapy"

1:30 to 2:00 P. M.

EDWARD C. HELWIG, M. D., Vincennes, Ind.

"Tonsil Clinic"

2:00 to 3:30 P. M.

How to Get Here:

DRIVING—Follow Washington Blvd. 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.

be assured of a seat. There is no fee, of course; every M. D. interested in Physiotherapy is cordially invited.

H. G. FISCHER & CO., Inc., Phone Armitage 0323
Physiotherapy Headquarters
2333-43 Wabansia Avenue, Chicago

FISCHER'S MAGAZINE



375

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DECEMBER, 1925

THE GREATEST RE-
WARDS OF MAN-
KIND ARE OBTAINED
BY THOSE WHO EARN-
ESTLY AND CONSCIEN-
TIOUSLY WORK.

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.*

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Vol. IV.

DECEMBER, 1925

No. 12

Looking Backward—And Forward

Another year of labor in the vineyard of Physiotherapy is drawing to a close.

As the earnest worker in the cause of this newest branch of medical science pauses in his task, to take stock of what has been accomplished during the past twelvemonth, he must be gratified, indeed, at the progress that has been made. The methods of former years have been perfected, new technic has been developed for many treatments. There have been a number of notable additions to the literature, and the list of contributors to the various journals has grown amazingly.

Schools of Physiotherapy are being established in many educational centers, which means that the physician of tomorrow may start out on his career fully equipped to employ the physical modalities. Some of these schools, such as the New Haven School of Physiotherapy, Columbia University, Stanford University and others, now offer a post-graduate course that may be taken by the man in the field.

Recognition has come to Physiotherapy, as recognition must come to all new developments of science, slowly and only after thorough trial and convincing proof of its usefulness. This is as it should be, and no one of those most interested could wish it otherwise.

To those who have led in the search for knowledge in this field, and to our many thousands of readers whose interest has aided in this search, FISCHER'S MAGAZINE extends congratulations and the earnest wish that the New Year may bring to them a full measure of success and advancement.

Physiotherapy Now Taught In Many Colleges

A recent survey of the field discloses the fact that a large number of well-known Universities now include instruction in Physiotherapy in certain of their courses. The following list will show how extensive is this recent development:

University of Pennsylvania, Philadelphia: "The curriculum of the students in the undergraduate department includes an excellent lecture course in Physiotherapy conducted by Dr. R. Tait McKenzie, professor of Physiotherapy in the school, and director of physical education in the University."

Dalhousie University, Halifax, N. S.: "Apart from the didactic instruction which is given in the course in therapeutics, the teaching in Physiotherapy is almost entirely clinical, and determined by the nature of the cases under treatment."

Tulane University of Louisiana: "Physiotherapy is taught to the regular medical students. No courses of any kind are offered to medical graduates or to nurses in the School of Medicine."

University of Wisconsin, Madison: "We are giving a course this year in Physiotherapy to our third year Medical students, which is a part of the regular curriculum in Therapeutics. We will no doubt have post-graduate courses for physicians later on—perhaps intensive courses of instruction for periods of two weeks. We are also giving during the second semester a course in Physiotherapy, as a part of the nurses training course."

McGill University, Montreal: "We give a short course on Physiotherapy in connection with the Department of Therapeutics. However, next year we are hoping to inaugurate a much fuller course."

The University of Vermont, Burlington: "Physiotherapy is taught in the Dispensary two days a week, and while we are glad indeed to have physicians attend these exercises, it probably does not offer a satisfactory course."

University of Alberta, Edmonton: Undergraduate medical students are given instruction in Physiotherapy at the University of Alberta Hospital."

University of Manitoba, Winnipeg: "This year we have instituted a course in Physiotherapy for our third year students. This course consists of lectures and demonstrations."

Vanderbilt University, Nashville: "We have a small Physiotherapy plant in our new hospital, and hope that we may take nurses and possibly doctors for training, later."

The Long Island College Hospital, Brooklyn: "We have recently organized a course in Orthopedic Nursing, for registered nurses, and in this course Physiotherapy is one phase of the general subject."

University of Minnesota, Minneapolis: "Last year the University of Minnesota, Medical School, through the Extension Division, gave a course in Physiotherapy for physicians, with Dr. Granger of Boston in charge. This course was a great success."

University of Michigan, Ann Arbor: "We are giving a special course in Radiotherapy, and inasmuch as our department has connected with it Heliotherapy, a course could possibly be arranged to include Physiotherapy generally."

University of Toronto, Toronto: "The subject is touched upon in various courses such as in the Department of Therapeutics, but there is no specialized department in which Physiotherapy is taught apart."

University of Buffalo, Buffalo: "We have no courses in Physiotherapy that a physician or registered nurse may attend, but we do give a course in Physiotherapy to our medical students. This course is required."

Detroit College of Medicine and Surgery: "The Detroit College of Medicine and Surgery offers instruction in the general principles of Physiotherapy to regular registered members of the Junior Class in that institution."

Columbia University, New York: "In presenting a post-graduate course in Physiotherapy to the medical profession, it is the desire of Columbia University to include such work and

lectures as to qualify the members of the course to actually practice and administer the different forms of Physiotherapy. This course is arranged for *licensed practitioners of medicine only* and it is felt that in a period of six weeks of daily clinical work, together with eight or more lectures, the members will be able to acquire a general working knowledge sufficient to practice Physiotherapy.

"The course will be given at The Beekman Street Hospital, which is located in the downtown business and shipping district of New York City, on the corner of Beekman and Water Streets. It has very active Acute Medical, Surgical and Industrial Accident Services, well patronized Out-Patient Department and the work in the Department of Physiotherapy is mostly in the treatment of traumatic conditions, from the acute through the convalescent stages and up until the patients can return to work."

Stanford University Medical School, San Francisco: "A 6 months course is available at the Stanford University Hospital to a recent graduate in medicine who has completed at least one year's hospital work in medicine and surgery.

Walter Reed General Hospital, Washington: "The department of Physiotherapy at Walter Reed Hospital is devoted to the treatment of both medical and surgical cases. It is fully equipped. The treatments are administered by a staff of Physiotherapy Aides under the supervision of a Medical Officer, the Director of Physiotherapy."

College of Medicine of Syracuse University, Syracuse, N. Y.: "Six lectures and demonstrations are given to the fourth year students in physiotherapy."

It will be noted that the scope of the work varies all the way from a few lectures and demonstrations to a complete course which may be taken by the graduate M. D. What this means for the future development of this comparatively new branch of Medical Science, may readily be appreciated. The labor of pioneers, in recent years, is bearing fruit in a manner that must be most gratifying to that band of earnest workers whose efforts have brought Physiotherapy to the fore.

The New Haven School of Physiotherapy

This famous school of physiotherapy, now in its seventh year, is one of the five approved by the A. M. A. as graduate schools for physicians. The course was recently changed from two months to a full year, in order to train properly qualified people as physiotherapy technicians.

Harry Eaton Stewart, M. D., is Director, and the faculty includes Drs. Barker, Seabury, Higgins, Peck, Evans and Wheatley, together with a number of well known physicians who give special lectures. The School gives short, intensive courses to physicians who comply with the graduate training requirements of the A. M. A., that is, graduation from a Class A school with a full intern year or five years of practice. Physicians taking the course at this school may put in a full day of eight to ten hours in theory, apparatus management and actual clinical treatment of patients.

Electrocoagulation In Skin Cancer

Review of an Article By RAY C. LOUNSBERRY, M. D.

The technique employed by the writer in the treatment of skin cancer by electrocoagulation is the same used by all electrotherapists—the transmission of a D'Arsonval current through a sharp pointed aluminum needle, continually plunged into anesthetized areas until they are coagulated.

The writer considers this method as the most satisfactory method of destroying benign, semimalignant and early malignant growths. This form of treatment has been used by many dermatologists with a vast amount of real success. In the mind of the author, when patients learn that a technique has been developed which at a minimum of expense can produce good results, they will likely apply for treatment earlier and thus so many late cases with extensive destruction of tissue will be eliminated.

(From Missouri State Med. Jour. Jan., 1925)

Surgical Diathermy

By W. B. CHAPMAN, M. D.

Carthage, Mo.

How Produced

Diathermy is produced by the resistance of the tissues to the passage of a high-frequency current, and to be of value in therapeutics, the oscillations should be quite rapid. The latent period of a muscle contraction is approximately 1/50 of a second, but it has been claimed that oscillations as slow as 400,000 per second will produce uncomfortable Faradic effects, and this is to be avoided. The average machine on the market today delivers from 800,000 to 1,000,000 oscillations per second, and a few of the higher type machines produce as high as two million.

Temperature

The degree of temperature developed within the tissues is determined by five factors.

1. The amperage employed.
2. The frequency of the oscillations.
3. The size of the electrodes.
4. The resistance of the tissues.
5. The time of application.

The voltage or electromotive force occupies the same position in diathermy that it does in X-ray. It is the force that drives the electrons through the tissues and the only requirement is that it be sufficiently strong to insure a smoothly flowing current. Clinical observations that I have made indicate that it is not advisable to employ an excessively high voltage in treatment.

Five Factors Discussed

The *amperage* represents the size of the electrical charge delivered to the patient, and in surgical diathermy is a relative thing. The number of milliamperes required to coagulate, desiccate, or char tissue differs widely under different conditions, and is affected by the following factors:

1. Type of tissue.
 - A. Soft or hard.
 - B. Dry or moist.
 - C. Vascular or nonvascular.
2. Resistance.
 - A. Distance between electrodes.
 - B. Density of tissues.
3. Electrode.
 - A. Type.
 - B. Size.
 - a. Actual.
 - b. Relative.

Bone heats quickly and retains its temperature for a considerable time after treatment. This is due to the greater density and also to the poorer blood-supply of the cortex and periosteal sheaths.

Periosteum and muscle sheaths, tendons, cartilage and cicatricial tissue, that is, tissue that is relatively nonvascular, heats very quickly. Fat is also a poor conductor of electrothermic energy.

All highly vascular tissue is difficult to coagulate on account of the resultant heat being rapidly dispersed by the blood stream; and the presence of blood or other conducting fluids on the surface is absolutely contraindicated. For success in surgical diathermy, it is essential that all oozing be controlled. We can combat the increased vascularity of a neoplasm by increasing our amperage, but, if blood appears on the surface, our operating electrode immediately becomes equivalent to an instrument with a treating surface the size of the blood-covered field, and it is absolutely useless to proceed with the operation until the hemorrhage has been controlled. This may be accomplished by sparking the bleeding points with the active electrode held close to, but not in actual contact with, the bleeding tissue. I usually desiccate the surface of a tumor in this way before passing the instrument into the depths.

Size of electrode—It has also been found, experimentally, that the concentration of energy within the tissues is inversely proportional to the size of the electrodes, and that the concentration at one electrode is inversely proportional to the relative size of the two electrodes.

Resistance—The resistance is determined by two factors; that is, the density of the tissue, which increases, and the distance between the electrodes, which diminishes the thermic effect. This being true, the dosage equals the milliamperage, times the density, times the time, divided by the depth in centimeters of the tissue traversed by current. Expressed algebraically.

$$D = \frac{M \times R \times T}{D'}$$

Where D stands for dosage, M for milliamperes, R for density, T for time, and D' for depth of tissue.

Time—There can be no hard and fast rule regarding the time of treatment in surgical diathermy, and it is here that the skill of the operator comes into play. Few surgeons take into consideration that a cell may be heated to the point of coagulation without macroscopic changes being immediately apparent; and the tendency, especially among beginners in electric surgery, is to treat too long and too intensely, thereby producing unnecessary tissue destruction.

(Abstracted from *Clin. Med.*, Nov., 1925)

Electrocoagulation in Surgery

Johansson describes his experimental and clinical experiences with surgical diathermy, including a number of cases of cancer of the mouth, penis and rectum, and one inoperable, broad-based sarcoma of the left side of the neck and as large as a man's head. Under two applications of electrocoagulation the growth was removed down to sound tissues, with complete healing in about six months.

(From *Jour. A. M. A.*, Sept. 19, 1925)

The Treatment of Bell's Palsy By Physiotherapy

By J. C. ELSOM, M. D.

Physiotherapist, Wisconsin General Hospital, and Jackson Clinic
Madison, Wisconsin

Bell's palsy is easily recognized. The face on the affected side is immobile and its wrinkles become smoothed out. The lower lid droops and, because the punctum lacrimale is not in contact with the conjunctiva, tears trickle over the cheek instead of passing into the lacrimal duct. The eye is more widely open on the affected side, and cannot be voluntarily closed; on making the attempt, the eye-ball rolls upward. The patient cannot purse his lips, nor whistle. When he laughs, or attempts to show his teeth, the mouth is drawn strongly over to the unaffected side.

The prognosis, as in the case of other nerve disorders, is largely based upon electrical reactions. If reaction is normal, or nearly so, the prognosis for a fairly early recovery is good. If the reaction of degeneration is only partial, recovery may be expected within perhaps three months; complete reaction of degeneration gives a doubtful prognosis. Recovery may take six months or a year.

Treatment

The treatment of Bell's palsy by physiotherapeutic methods alone seems productive of very satisfactory results. In most cases, the patient is considerably alarmed concerning his condition and is apprehensive as to the outcome; he is often fearful of some mysterious and destructive brain lesion. Therefore, at the outset, the patient should be encouraged and his fears allayed by giving a hopeful prognosis. As far as possible, the patient may engage in his usual occupation, avoiding mental and physical strain and worry. The usual advice as to hygiene may be given, stressing the importance of sufficient sleep, moderate exercise, and attention to diet and elimination. Possible foci of infection should in all cases be discovered and removed if possible.

Heat to the affected parts of the face, ear and mastoid region should be employed. Its effect seems very beneficial. The heat may be employed in several ways. Hot water bags, used at home, are helpful. The radiant heat and light from the modern "deep therapy" lamps is our own routine treatment. The action of the smaller lamps is very efficient. Fifteen or twenty minutes of this radiant heat is followed by diathermy, with the following technic; two metal electrodes are connected to the D'Arsonval terminals of any good, resonant high-frequency machine. In our own work, we seat the patient near a table, with his elbows resting comfortably. He holds in his hands two hand electrodes, one placed over the affected part of the face near the angle of the jaw, the other on a similar part of the unaffected side. The current is turned on slowly and a few minutes used in gradually advancing the milliamperage up to about 500. The sensation is one of a pleasant, sedative heat. The treatment should last from twenty minutes to a half hour. It is better, occasionally, to shift the position of the electrode on the affected side and, for a part of the treatment, apply it near the mastoid region. The next step in the treatment is the application of the galvanic, slow sinusoidal current.

The older textbooks recommend mostly an expectant form of treatment with absolute rest. Our own experience has been that the sooner the treatment is begun, the better the results. Consequently, we begin the heat and electric treatment at once. The galvanic, slow sinusoidal current is given, using two equal sized electrodes (about an inch and a half in diameter); one of these placed in front of the ear, sometimes on the mastoid region, the other moved about along the motor points of the affected muscles. These points are best located near the angle of the mouth, the lower and outer border of the nose and the side of the chin. A mild current is given, especially in recent cases, and continued for only a minute or two; just enough to produce a mild muscle contraction. Later, the stimulation may be increased, and the time of treatment lengthened to five or ten minutes.

In addition, we make use of exercise and massage. The patient is encouraged to make an effort to use the affected muscles and to do any voluntary muscular effort of which he is capable. Blowing up the cheeks, and trying to prevent the escape of air from the affected side of the mouth is a good form of exercise.

When improvement begins to take place, one of the first signs is the extension of wrinkles on the forehead when the patient raises his eyebrows by muscular effort. The mouth next shows improvement; in most cases the ability to close the eye completely comes last. If, during sleep, the eye is imperfectly closed, our own practice in some cases is to use a small strip of adhesive plaster applied from the cheek to the forehead, pulling the eyelids together, thus preventing an undue sagging and stretching of the unused facial muscles.

The last form of the treatment is the application of massage. This is given after the muscles and tissues are well heated; the movements are made with the finger tips, gently kneading and stroking the affected muscles. All of the forms of treatment enumerated are best given daily or, at least, three times a week.

Case Reports

Case No. 1. H. E. W., white, male, aged 26; previously in good health; well nourished; occupation, farmer. First seen at the Jackson Clinic, June 27, 1925. Family history, negative. Went in swimming June 25th and afterward drove his car ten or twelve miles, a cool wind blowing on his wet hair. The next morning noticed complete facial paralysis on the right side. Applied for diagnosis and treatment the next day. Treatment, as indicated above, given twice a week and heat applied several times daily at his own home. Five diathermy treatments given at the Clinic. Reported July 18th entirely relieved, with full muscular movement. The right lower lip was slightly atrophied at the corner from disuse.

Case No. 2. Mr. L., traveling salesman; drove his car a great deal, often taking long drives. One morning, after a long drive, he tried to whistle as he was dressing, and found he was unable to do so. Complete facial paralysis, for which he re-

ceived no treatment until ten days had elapsed. Developed a multiple neuritis, shoulders, arms and hands being affected. Facial paralysis cleared in two months, after three treatments weekly. General diathermy benefited his neuritis, and general ultra-violet radiation was continued for a month longer, with success.

Twelve similar cases have been treated during the past six months, all attended by good results.

Conclusions

Treatment for Bell's palsy should be instituted immediately at the onset.

Prognosis depends on the normal response to galvanic stimulation. Diminished contraction of the facial muscles may be expected to some extent; if there is no response to galvanism, the case is severe, and will probably take many months before recovery.

The application of radiant heat and light (convective) and diathermy (conversive) is indicated.

Galvanic stimulation of the muscles should be done carefully and for periods of short duration, with gradually increasing seances.

Massage and active exercise are helpful.

(*Abst. from Clin. Med., Oct., 1925*)

Office Assistants Desire Positions

Physicians who require the services of a competent nurse or technician in their electrotherapeutic work will do well to communicate with this office.

We have on file the applications of some forty people who have had this training, and will be glad to put you in touch with one or more of them whose qualifications meet your needs. There is no fee or obligation involved. Just state your needs to the

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The Antirachitic Action of Light

C. E. Bloch and F. Faber in the *Ugeskrift for Laeger*, give an account of investigations carried out during the autumn and winter into the action of ultra-violet light on fifty infants suffering from rickets or tetany or both these diseases. They were kept on the same diet of milk and carbohydrates as that on which they had developed these diseases, and they were not given cod-liver oil or any other drug or food calculated to influence the diseases treated. The experiments with light treatment by a mercury-quartz lamp were thus uncomplicated by extraneous factors. The phosphorus and calcium content of the blood was determined from time to time, and it was found that in rickets the phosphorus content, and in tetany the calcium content, of the blood rose to the normal level within a few weeks of the commencement of the light baths. In the case of rickets the phosphorus content of the blood rose to the normal level within four weeks of the commencement of the treatment, and after a total exposure of about one hundred minutes. In two cases of diabetes in children ultra-violet light treatment was given, with the result that the concentration of sugar in the blood fell, the fall being equivalent to that following the injection of 3 or 4 insulin units. As the excretion of sugar in the urine was not increased, and there was no evidence to show that the blood sugar had been deposited in the tissues, the authors conclude that the light baths had stimulated the pancreas to turn out more insulin than before. They argue that light, ultra-violet light in particular, has an activating effect on those functions of the body which are below normal, and that this activating action is unconnected with vitamins. Treatment of rickets with ultra-violet light not only raises the phosphorus content of the blood to the normal level, but also keeps it at the normal level after the light baths have been discontinued. It cannot therefore be argued that these light baths have provided or liberated a substance such as phosphorus or a vitamin which was previously wanting, for these substances are always being consumed, and must therefore always be replaced. The authors

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static cancer can be done with an electrically heated bevel edged cautery with marked reduction in the amount of blood lost during the operation, marked decrease in post-operative pain, marked decrease in number of patients showing any operative shock whatever and with primary union of skin flaps.

2. Operations done with the technic described, as compared with cauterization as commonly practised, result in less pain, less shock and much shorter convalescence.
3. Operations done by this method, as compared with operations done with the knife, scissors or gauze dissection method result in fewer local recurrences in or near the site of operation and therefore a greater percentage of three and five year cures.
4. Since the groups of cases here reported contain many that would ordinarily fall in the inoperable group, the author believes that if this type of technic were used in only the operable group, the percentage of three and five year cures should be still further increased.

(Abstracted from J. A. M. A., Nov. 7, 1925)

Rickets Treated With Ultra-Violet Rays

P. Porcelli, in the Raggi Ultravioletti, reports in detail three severe cases of rickets successfully treated with ultra-violet rays. The children were aged 8, 6, and 5 years, and were members of one family. Twenty-four applications were made at intervals of five to eight days. One child, who had not walked at 5 years, was able to walk after six irradiations. The radiograms showed increased centres of ossification in the carpus after two months' treatment. The general condition of the children improved most markedly; they were more lively, their colour improved, and the bone tenderness disappeared. The quartz lamp was used at distances beginning at 1.7 metres to 0.8, and the sittings lasted from ten to thirty minutes. Photographs of the children, and radiograms before and after treatment, are given.

(From Amer. Jour. Phys. Ther.)

Gallbladder Disease Treated by Sine Wave and Diathermia

By JOHN G. WALSH, M. D.

Woodbine, Iowa

Case No. 1. Mrs. W. February 1, 1925, while reading the Sunday paper, the patient was taken with a severe attack of gallbladder colic. I gave her $\frac{1}{2}$ grain of morphine hypodermically and as she had no relief in half an hour, I gave her another $\frac{1}{4}$ grain and at the end of an hour was contemplating giving her an anesthetic when pain was relieved. However, the after effects of the morphine were bad. The nausea, vomiting, anorexia persisted and a long time was necessary to get over the effect of the opiate. These, of course, are very bad features of this treatment. We have all seen drug addicts develop as a result of this treatment, and it usually means several days in bed and quite a little medication.

The patient had a gallbladder drainage operation 10 years before at which time several stones were removed. She did not relish the idea of another operation nor of the attacks, yet that seemed the only solution.

It was at this time that the thought occurred to me if something could be used to stimulate rhythmic contraction in the gallbladder muscles perhaps it might overcome the pain. This suggested the use of the sine wave current.

On February 10th, when the next attack occurred, which according to her word was more severe than the two preceding, I loaded her in my car and took her to my office. There I used the sine wave current, placing a 4 by 4 moist pad over the gallbladder and 6 by 8 moist pad under the tenth dorsal vertebra. The strength of the current was increased until the muscular coat of the gallbladder began to take on rhythmic contraction, at which time the pain began to gradually lessen and at the end of fifteen minutes the colic pain had ceased. As she still had a little soreness, I turned the radiant light on her abdomen for twenty minutes at a distance of twenty inches.

The contrast between the after effects was remarkable, instead of having nausea, vomiting, anorexia, etc., and two subse-

quent days in bed as in the previous attack, she was able to go about her work and attend a club meeting the following day.

I repeated this sine wave treatment two times a week for three weeks, but instead of the radiant light, I substituted diathermia, giving twenty minutes with the current to a comfortable toleration.

Case No. 2. Mrs. A., a housewife, 32 years old was seen in an attack in the country and could not be transported to the office, on account of the condition of the roads. She had slight jaundice, a wine colored urine and light colored stools. Two days after the attack she was given a treatment as outlined above and her general condition and digestion improved. She says she feels the best she has in years and is free from attacks.

Case No. 3. Mr. H., 25 years of age, a farmer, seen in an attack, was too far in the country to be moved to the office at the time of his attack, but was brought to my office several days afterwards, when he was given the treatment as outlined above. He made a very satisfactory improvement and says that he feels the best he has in years.

The above cases and subsequent results lead me to believe that in the sine wave current represented by the sine wave generator we have an agent of remarkable power in overcoming gallbladder colic and stasis and in diathermia a powerful agent for bringing fresh arterial blood to the parts and thereby overcoming the infection. It also has the advantage of doing away with the morphine. I am sure if my fellow practitioners will try this method of treatment on their gallbladder cases, they will be agreeably surprised and will have many grateful patients.

(From Jour. Radiol. May, 1925)

Psoriasis

All cases of psoriasis which I have treated by the mercury vapor lamp (air cooled) have been improved and many seem to be cured. In ordinary cases, six irradiations are sufficient, but cases of long standing require more.

(Statement by Dr. W. F. Castle, in the Practitioner, London)

Cautery Treatment of Endocervicitis

The use of the electrocautery in the treatment of chronic endocervicitis is surely enjoying increased popularity, judging from the number of enthusiastic reports which are appearing in the literature. One of the proponents of this therapy is Davis (Surg., Gynec. and Obst., 1925, 40, 568), who describes his technic as follows:

After inserting a suitable bivalve speculum the mucous discharge is thoroughly removed with cotton balls. A suitable nasal cautery tip, preferably one longer than usually supplied, is placed firmly against the tissue to be destroyed and the current turned on. As a sufficient depth is reached in the cervical tissue along the cervical canal, the tip is gradually moved so as to make a line through the diseased tissue.

In many cases it is only necessary to cauterize the glands near the external os; in others the disease extends to the internal os. If at any time the patient complains of discomfort the contact button is immediately released and the current not applied again until she is comfortable. This process is repeated until a sufficient number of cautery lines have been made. Nabothian cysts are destroyed in a similar manner after puncturing with the heated tip. An effort is made to reach the depths of the glands so as to destroy the chronically diseased tissue. Most cases of endocervicitis may be treated in the office.

One thorough cauterization results in early relief from most of the symptoms, and complete healing is usually found after six to eight weeks. If the first treatment is very superficial another may be needed after four weeks. Very few patients will need more than two treatments with the cautery. As a rule, it is advisable to administer an anesthetic (gas and oxygen) to virgins, women who are very nervous or those who require unusually deep cauterization, due to the long duration of the endocervicitis. It may be difficult at times to remove tissue for examination unless the patient has an anesthetic.

After a cautery treatment the patient is instructed to wear a pad until the increased discharge stops, which is usually in about

ten days or two weeks. She is also warned that the next period may be more profuse than normal, occasionally so severe as to require a pack for a few hours. Douches are advised against but the patient is advised to keep herself clean by external washing. The cervix is painted with 5 per cent mercurochrome solution every week until healing is complete.

Sex trauma should be avoided during the period of convalescence from the cauterization.

(From *Am. Jour. of Med. Sciences*)

Extensive Verrucosis

In a recent issue of *Clinical Medicine*, W. K. Johnson, M. D., of Garnett, Kas., reports a case that should be of interest to readers of *Fischers' Magazine*. Perhaps some one of our readers can help the Doctor with a suggestion. Here is his report:

"I wish to report a case which seems decidedly unusual and to ask for helpful suggestions.

"*Case*—Lila B. Age 14 years. *Family history*: Negative, except that mother is overweight and constipated. *Personal History*: Negative. Patient is strong, healthy and intelligent, of normal size and weight for her age.

"At about five years of age, warts began to appear, mostly on her hands and forearms, but a few scattered over her body. These have gradually increased until her mother recently counted 732.

"I have considered fibroma molluscum and hypertrophic, Verrucous Lupus Vulgaris in diagnosing this case; but the cauliflower appearance of the tumors is *very* marked, and tubercle bacilli are absent.

"I have a diathermy apparatus, but to tackle 732 warts seems a herculean task. How can I obviate severe pain in such a wholesale assault?

"I have in mind to inject butyn solution just under the skin to anesthetize as large an area as will be safe, and then fulgurate the anesthetized area at one sitting. What is your opinion?"

The Value of Soft-Ray Technique in Pulmonary Radiography

By BERNARD HUDSON, M. D. and PERCY G. SUTTON, M.S.R.

This article is an attempt on the part of the writers to explain the value of the soft-ray technique of radiography,* especially as a diagnostic aid in dealing with early tuberculous lesions of the lungs. A radiograph of a lung affected with tuberculosis may be made to show a very different picture, according to the quality of the rays employed. The hard ray will penetrate an early focus of tubercle and give an appearance similar to that of normal tissue. Old fibrotic foci, however, are opaque to the more penetrating, and in fact, to all rays. The hard-ray radiograph is liable to show the older and healed lesions only, the more recent and much more important earlier foci being generally missed. In order to obtain really satisfactory results in pulmonary radiography, soft-ray technique must be employed.

Comparison of Techniques

The appearance of a normal healthy chest in an adult taken by hard-ray technique varies enormously from the same subject taken by soft rays. Using the hard ray, the fine mottling of the connective and interstitial tissue of the lung is not shown, and the harder the ray the less this is discernible. All that is seen in the negative is a more or less uniform darkness over the whole of both lungs, with the ribs showing very plainly, even the bony markings being visible; the vertebral column, too, is often plainly distinguished through the heart shadow. The roots of the lungs appear as lighter shadows on each side, but their finer parts are not seen, nor are the delicate radiations which extend downwards, upwards, and outwards from them. This appearance, of course, varies with the hardness of the ray employed, the harder the ray the more easily does it penetrate the interstitial tissue of the lungs.

The appearance of the same chest taken by the soft-ray technique is very different. Scattered through the lungs on

* By soft rays we mean a secondary voltage of 45 kilovolts = an equivalent spark gap of about 4 inches = 4 benoist. By hard rays a secondary voltage of 60 to 70 kilovolts = an equivalent spark gap of about 6 inches = 6 to 7 benoist.

both sides there is seen a fine mottled and striated appearance, which is the pulmonary connective and interstitial tissue, the roots are much better defined, and their radiations plainly seen. The ribs appear as more or less indefinite shadows, and the fine bony markings on them are not evident. The details of the vertebral column are not seen, as the soft ray does not penetrate the heart and pericardium.

Comparing these two radiographs, the uninitiated would perhaps say that the one taken with the hard ray was the better picture of the two, and the one taken by the soft ray might perhaps be diagnosed as tuberculosis affecting the roots of the lungs, the mottling being also thought to be pathological in appearance. These characteristics are even more distinct in children; and in children of, say, about 8 to 10 years old the diagnosis of hilum tubercle has no doubt often been made from the appearance of a soft-ray radiograph of a normal chest of a child. It is a very important thing, when giving an opinion of a chest radiograph, to be able to distinguish what is normal from what is beginning to depart from the normal, which can only be done by an extensive experience of the soft-ray technique.

(From The Lancet)

Each Time You Pick Up Your Telephone

Did you know that you lift a weight $1\frac{1}{4}$ pounds greater than a Baumanometer (Desk Model) when you pick up your telephone?

Two copies of the A. M. A. Journal and a daily newspaper would add more weight to your bag than the Kitbag Baumanometer, complete with inflation system.

Subtract the newspaper, and you have the weight of the Pocket Model, complete.

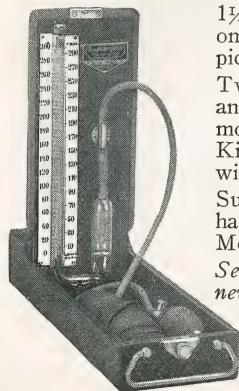
Send for a chart descriptive of the new Cabinet Model Baumanometer.

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Practical Experience With Diathermy

By B. T. GREEN, M. D., F. A. C. S.

Brookings, South Dakota

Though a most valuable addition to our therapeutic armamentarium, diathermy, like all other remedies, often fails or falls short of the results expected even by the most conservative therapist. While heat may be capable of producing perfect reactions it must be remembered that failures may result from imperfections in therapeutic judgment, imperfect technic, imperfect apparatus, and imperfections in tissue reactions. There will be failures proportionate to these and other imperfections, while better judgment, apparatus, and technic will serve to eliminate failure and bring greater success.

Numerous disappointments in the course of a somewhat extended experience with diathermy has led to the writing of this paper. No originality in discovery of causes of failure is claimed; however, investigation has impressed a few facts which are passed on for whatever they may be worth.

In the few favored spots where heat may be located with some degree of accuracy, failures often result because the proper balance of amperage and voltage is at fault. There must be sufficient current for conversion into the required amount of heat and a voltage which will be sufficient to overcome the resistance necessary for the conversion. Unless this nicety of balance is preserved failure may result where diathermy would otherwise succeed. It is a difficult practical problem in the conversion of energy, and success depends upon its solution. The tendency is to use too much amperage and too little voltage in deep therapy. Much of the so-called deep diathermy fails in its results because, after all, it is merely surface treatment.

Many operators work in the belief that the transformers they use can be made to deliver the necessary voltages for deep treatment when they cannot. A transformer for ordinary work should have a voltage up to at least 30,000 volts. Operators should insist upon high-voltage control and give less attention to high amperages. 2,000 ma. is sufficient for ordinary work.

Sedative diathermy may sometimes fail because the voltage is too high. Instead of a soothing sensation, pain is felt in the part under treatment either at the time or some time afterward. The treatment supposed to be sedative has been stimulating. However, a generator that is out of resonance may produce the same result; and, before deciding that voltage is too high, a test for resonance should be made.

The condition of the patient's skin may be a handicap. When wet electrodes are applied to a normal skin and the amperage slowly raised to the desired point, the natural perspiration will continue to keep the contacts moist after the soap, lather, or other medium has dried. If the sweat glands are inactive the patient soon complains of a stinging electrical sensation which prevents successful treatment.

The successful treatment of the obese is often difficult, if not altogether impossible, for the reason that adipose is a poor conductor, and the skin, which in the obese is usually moist, easily diverts the current and the deeper structures are not reached.

Placing electrodes at great distances is likely to result in partial or total failure because of the varying densities and the lack of continuity of tissues in the desired track of the current. Fortunately in some instances there may be fair uniformity of structure; and, with sufficient voltage, enough current may be made to pass between the electrodes to heat the tissues sufficiently to secure good results from the treatment.

When pathological structures to be treated are near the surface of the body or in accessible body cavities, one electrode may be placed in near proximity, in which case it may matter little as to the position of the other. An opposite location is desirable and should be chosen when possible, otherwise it may be placed almost anywhere and its size increased to indifference.

Failures often occur because the operator is a stickler for direct diathermy. Many conditions may be better handled by the indirect methods, either bipolar or unipolar. Local pathology may often be treated to advantage by the non-vacuum electrode, while general conditions and illy defined local inflam-

mations are best reached by the autocondensation pad or chair. Any modification that will supply heat where it is desired is scientifically correct. If it is kept clearly in mind that it is heat, and heat only, that is required in treatment and make proper application regardless of the source or combination, many failures will be turned into successes.

Permanent cure by diathermy is possible in selected cases, such as traumatic injuries,—sprains, fractures, infections with ample drainage, etc. It would be a poor therapist who would expect permanent results in treating a neuritis due to a focal infection without the removal of the focus.

Much of the treatment by diathermy is necessarily palliative, in which case the demand and the prescription are both proper even though relief may extend only over a few hours. These are cases in which failure is expected as far as tissue repair is concerned. It is administered like any other sedative treatment, though, unlike most others, it is without depression or other harmful results; for example, headaches due to eyestrain may be palliated by sedative diathermy, while cure is found in the proper correction of the visual defect.

It seems unnecessary to call the attention of a group of physiotherapists to the large number of failures in diathermy due to faulty diagnosis when the very choice of treatment is based upon diagnosis. Many consider that a diagnosis is made when an ailment is named, but not so except in so far as the name of a disease implies certain typical pathology. Is it not a fact that a typical pathology is the rule in disease and that the most successful treatment is applied for the relief of the pathology present and not because a certain name is applied to a typical condition? The diagnosis required for success in diathermy is an accurate knowledge of the diseased or damaged tissue to be treated, its extent, the degree of impairment of normal physiological processes, etc.; in other words, the therapist must know, as far as possible, just what is going on in the diseased area and to estimate reactions. This is real diagnosis, and unless carefully worked out diathermy will be followed by many more failures.

It is frequently advisable to employ diathermy as an adjunct to other treatment,—medical, surgical, other forms of physiotherapy, etc. Doing so is often the difference between success and failure. Though diathermy is a specific in its own field and is recognized by many as the most successful anti-itis treatment known and that it is more often indicated than any other, it frequently requires additional measures and may itself be employed as an addition to other treatment.

Those who have made therapeutic use of high-frequency electricity during the past ten years (approximately the period during which really effective generators have been available) have necessarily learned by experience. Many of their present successes have grown out of their past failures. It has been a matter of research, a more or less blind struggle for truth, during which time it has been difficult and often impossible to get the ear of scientific medicine. All is changed now. Diathermy is generally accepted by the profession, a literature has been built up, and the subject is being ethically taught in leading medical schools.

(Abstracted from *Jour. Lan.*)

New Fischer Diathermy Electrodes



These electrodes fill a distinct demand for small, solid diathermy electrodes that may be used with the regular hard rubber insulated handle.

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Catalog No. 626 — $\frac{1}{2}$ " Disc—VELVET.....		.50
Catalog No. 627 — $\frac{3}{4}$ " Disc—VENDEE.....		.55
Catalog No. 628 — 1 " Disc—VENDOW.....		.60
Catalog No. 606R—Handle —JECUR.....		.75
Catalog No. 630—Complete set of five—VENEER—		\$2.50.

Diathermy in Joint Injuries

F. W. Ewerhardt, St. Louis (Journal A. M. A., Oct. 10, 1925), regards diathermy as a safe heating procedure which can be localized in deep-seated tissues at will; the degree of intensity may be satisfactorily regulated by means of suitable electrodes of varying sizes, properly applied and augmented by the co-operation of the patient. It is a valuable measure to at least partial control of pain, spasm and swelling in the earlier stages of fractures and joint injuries, and contributes, therefore, materially to a favorable functional end-result. Patients take kindly to it, they are favorably impressed with the procedure, and their co-operation is more easily secured when movements and massage are indicated. Unquestionably, the period of convalescence in the treatment of fractures is materially reduced. Its application seems indicated in postoperative bone and joint conditions, acute sprains, fractures and bursitis; when brasiere is found necessary; in acute and chronic arthritis, and in treating contractures and fibrositis. It is contraindicated in cases of pus sac without drainage, when there is danger of hemorrhage, and in tuberculous joints and suspected malignancy.

Ultra-Violet Rays for Monkeys

Light therapy has attained a considerable vogue in this country and its use has now been extended to animals. Now that the autumnal fogs are cutting off the sunlight a new departure in the care of monkeys, which is being carried out at the Zoological Gardens, London, has been advanced a stage farther by providing two batteries of powerful electric light in quartz globes, which do not shut off the ultra-violet rays. One battery of three lights is in the open air under a veranda roof; the other is inside the monkey house, placed above the highest perches, with a reflector which throws down the beams, but which is protected from the monkeys by wire netting. At present the monkeys are given an exposure of only a quarter of an hour at a time, once or twice a day, according to the weather. When the light was first turned on, it was interesting to see how the

African monkeys and the little American marmosets discovered it at once. They rushed toward the light and sat immediately under it, stretching their limbs and turning themselves round and round, so as to expose their bodies thoroughly to the radiant light and heat.

(From J. A. M. A., London Correspondent)

Diathermy in Calcified Subdeltoid Bursitis

By JOSEPH F. HARRIS, M. D.

New York

E. M., a man, aged 52, a musician, was referred to me, Jan. 21, 1925, complaining of a painful left shoulder with inability to raise his left arm from his side. He stated that this condition had been present seven years with intermittent attacks of inability to raise the arm. The roentgenograms verified the diagnosis of calcified subdeltoid bursitis (January 19). He received his first treatment, January 21, and at the end of two weeks' treatment he was able to resume his occupation, that of a musician, playing a bass viol in a symphony orchestra. Some pain, however, persisted, and it was necessary in all to give him thirty-two treatments, at the end of which time all the symptoms, namely, pain and restricted motion, had disappeared. Roentgenograms were again taken, April 6, and showed an absorption of the greater part of the deposit. These pictures, forming the case record, show the diagnosis and the result of the treatment by diathermy.

The pictures show conclusively that diathermy is a curative measure and not a palliative one. A long series of cases treated over a period of years has shown a complete restoration of function and an absence of pain. It is therefore fair to assume that in each case the greater part of the deposit has been absorbed by this form of treatment. If not completely absorbed, it has been reduced to such a size that it does not interfere with the function of the shoulder. Up to this time I have not seen a recurrence. I do not hesitate to say that this is the treatment *par excellence* for this condition.

(From Jour. A. M. A., Oct. 10, 1925)

Diathermy for Prostatitis

By BENJAMIN DAMSKY, M. D.

New York

To the Editor:—In The Journal, October 10, you state that "diathermy furnishes excellent results in cases of chronic prostatitis. It is applied by placing a large indifferent electrode on the abdomen and a prostatic electrode in the rectum."

The technic at the Mount Sinai Hospital advised by Dr. H. Wolf, chief of physiotherapy, is as follows: The patient is seated on a chair. The large indifferent electrode is placed on the abdomen and held in place by means of an elastic bandage. A smaller electrode, triangular and padded with absorbent cotton which has been dipped in salt solution, is placed under the perineum.

The advantages of this procedure are that—there is less danger of burning the patient and the heat of the smaller electrode will penetrate not only the prostate proper but the adjacent structures, as the seminal vesicles, while in the direct method, one cannot be sure of reaching the diseased part and at any rate he cannot treat more than one lobe at the time. That the heat travels up into the rectum is shown by the raised rectal temperature (from 102 to 103° F.) taken immediately after treatment.

(From J. A. M. A.)

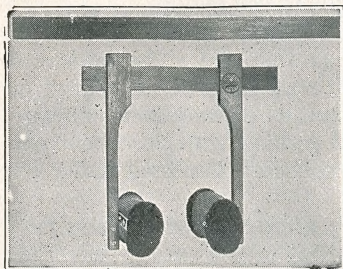
Congratulations, Dr. Walke!

Frank H. Walke, M. D., well known physiotherapist of Shreveport, La., was recently elected President of the American Railway Surgeons' Association, and also Vice President of the American College of Radiology and Physiotherapy.

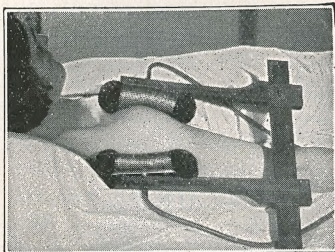
All who know Dr. Walke will join with us, we feel sure, in extending congratulations to him. Both organizations have chosen wisely in selecting him as an official, as without question time will demonstrate.

The Fischer Universal Diathermy Clamp

Made entirely of Polished Wood—The Perfect Diathermy Clamp



Fischer Universal Diathermy Clamp



Applied to the Shoulder

Here is a clamp that can be used for practically every medical diathermy application. Is instantly applied or removed; never short-circuits; may be used with any size of mesh covered sponge electrodes. A polished wood bar supports two sliding arms also of wood, which hold the electrodes firmly in place. Furnished with both long and short cross-bars, as illustrated. Simple, convenient and adaptable, this new clamp saves time and trouble and makes diathermy treatment easy for the physician.

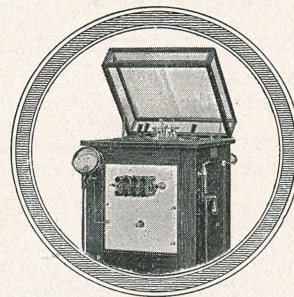
No. 930 *Diathermy Clamp*. Supplied complete with long and short crossbars and mesh covered sponge electrodes, code UCLAMP.....\$12.00

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A PAGE OF FUN

Tom—"My wife kisses me every time I come into the house."

Dick—"Affection?"

Tom—"No, investigation."

□ □ □

Mrs. Blub from the rural districts stopped her husband at the city's busy corner.

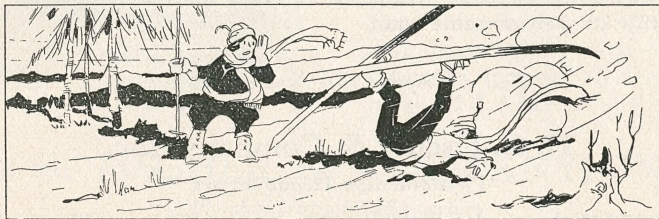
"Hiram," she expostulated, "the way you stare at the limbs of these shameless city hussies is something scandalous. One would think you'd never seen legs before."

"Jest what I be'n a-thinking, Mary," acquiesced Mr. Blub.

□ □ □

Woman in Auto: "Good heavens, son; we've just run over a poor man! Stop! Stop!"

Driver: "Keep still, mother; you'll make every one think this is the first time we were ever out in an auto."



Agnes (upright): "Isn't skiing hard on your feet, dear?"

Amy (recumbent): "N-no, darling, n-not on my feet!"

Mother: "Billy, why are you making your little brother cry?"

Billy: "I'm not. He's dug a hole and he's crying because he can't bring it into the house."

□ □ □

"Can you give a good description of your absconding cashier?" suavely asked the detective.

"We-ell," answered the hotel proprietor, "I believe he's about five feet five inches tall and about \$7,000 short."

□ □ □

"Doctor, if there is anything the matter with me don't frighten me half to death by giving it a long scientific name. Just tell me what it is in plain English."

"Well, sir, to be frank, you are lazy."

"Thank you, doctor. Now tell me the scientific name for it. I've got to report to the missus."

Last Call for the November Physiotherapeutic Meeting

Monday, December 14, 1925

G. W. FUNCK, M. D., Chicago, Ill.

"The Treatment of Genitourinary Diseases with
Diathermy"

11:00 to 12:00 A. M.

A. L. YOCOM, JR., M. D., Chariton, Iowa.

"Electrocoagulation of Malignancies"

1:30 to 2:30 P. M.

MR. E. W. ERIKSON, of Chicago, will discuss the practical application and usages of Quartz Ultra-Violet Light, 10:00 to 11:00 A. M. and 2:30 to 3:30 P. M.

Dr. Yocom is well known to those who have been regular attendants at this series of clinics, as a well-informed and interesting talker on physiotherapeutic subjects, he speaks from experience, and his talk on malignancies will be well worth hearing. Dr. Funck, too, brings to this clinic a profound knowledge of his subject, and G. U. men are especially invited to hear him. In presenting the talk by Mr. Erikson, we are following the suggestions of many physicians who have asked for a discussion of Ultra-Violet by an expert who can explain the quartz lamp from the practical end.

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